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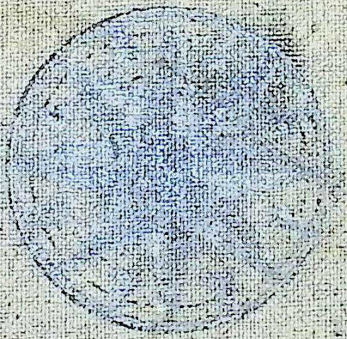

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DODGE'S
PRIMARY GEOGRAPHY

By

RICHARD ELWOOD DODGE

Professor of Geography, Teachers College, Columbia University, New York City;
editor of The Journal of Geography; and author of "A Reader
in Physical Geography for Beginners"

PART I

HOME GEOGRAPHY

PART II

WORLD RELATIONS AND THE CONTINENTS

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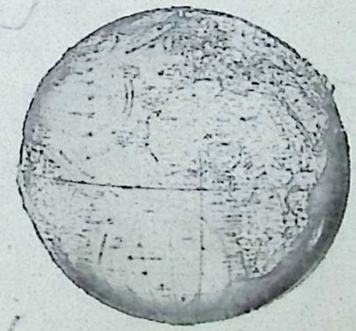

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THE PREFACE

THIS is a geography for beginners. The book has, therefore, been divided into two parts, entitled, respectively, "Home Geography" and "World Relations and the Continents." In the Home Geography the endeavor has been to write a text that could be readily made personal to every child in the country; a home geography in fact as well as in name. For this reason the point of departure has been the child in his home, and the subjects taken up successively are those that require a broader and more impersonal point of view.

In Part I. the purpose has been to show the relation of the individual pupil to all parts of his own country, and thereby to emphasize the interdependence of people commercially and industrially. Any treatment of Home Geography must be general in order to make it true for all children in all localities. In the suggestive questions, however, an effort has been made to localize the Home Geography for the individual pupil. He is asked to study his own environment and to explain its geography by the universal facts presented in the text.

Part II. opens with a treatment of those factors that must be understood by the pupil in order that he may appreciate his relation to the world as a whole. The interdependence of nations is here brought out. The last part is devoted to the several continents, and shows the reasons, so far as is possible within the limits of an elementary book, for the supremacy of certain industries in certain places.

By continually bringing out the relation between occupation and the manner of life and climate and the physical features, the physical side of geography has been given due attention for beginning pupils. The constant reference of effects to causes emphasizes the causal relation, though it may not be possible to go into a complete explanation of causes in a primary book.

As the physical features are shown to be of great importance in each section of the world, the pupils ought to be ready and expectant for a fuller and more causal treatment of the physical factors as such in the larger book. There the point of departure will be from the physical side, from causes to consequences, as in this book it is from consequences to causes. In other words, the aim of the writer has been constantly to develop a need in the pupil's mind for the next topic to be taken up, so that there will be no arbitrary jump from topic to topic or from book to book. It is only by developing such an order of treatment that we can secure a unity and a mutual dependence of the several years of geography work in the elementary school. Each year's work ought to be as natural and necessary an outgrowth of the preceding year's work as one lesson is of its predecessor. Such a natural advance means a logical advance, and that means the best emphasis of the causal notion. It is on these lines that this book has been constructed.

Special Features. Some topics have been omitted that tradition and conservatism have hitherto included in primary geographies. Some of these will appear in their logical position in the larger book, and some will not be included, as they are not geographical. It is not possible to omit all facts and topics that are not earth-determined or earth-influenced, but this should be the aim if the subject of geography is ever to be accepted as a disciplinary subject on a par with mathematics or history.

The topic Government is included only in so far as it is a geographical factor; that is, the [illegible] government rather than the form is brought out. Latitude and longitude are not included in this book, though the use of latitude and longitude lines in telling direction is included. Statistics have not been given to any great extent for the reason that most statistics have no permanent value as facts to be memorized. As showing relative conditions in a general way they are of great value, but it [illegible] that statistics are not as usable in an elementary as in an advanced geography.

It will be noted that zones have not been mentioned and that heat belts take their place. Neither zones nor heat belts can be fully developed in primary grades; each must be taught more or less dogmatically. As zones are essentially climatic belts, and as it is a knowledge of climatic conditions that is needed in primary work, the term heat belt is used as being more easily understood and decidedly more helpful and important.

Maps. The attention of geographers and geography teachers is especially invited to the large number and the excellence of the maps, all of which have been made expressly for these geographies. Each continent and the United States is represented by three maps, a *relief map* to give a bird's-eye view of the contour, a *physical map* showing, in accordance with the international color scheme, the land heights and water depths, and a *political map* giving the latest information in regard to boundaries and other varying points. For the first time in a school geography water depths are shown on all maps.

The drawings for the maps have passed under the critical eye of Dr. J. Paul Goode, *Assistant Professor of Geography in the University of Chicago*, an expert in cartography.

Proper Names. For the spelling of all proper names in the United States and dependencies, the decisions of the United States Board on Geographic Names have been followed, both on the maps and in the text. In the case of all other proper names the rulings of the Royal Geographical society, London, have been followed. The abbreviations used for the several states of the Union are those that have been adopted by the United States Post Office Department.

Illustrations. The illustrations have been chosen for their teaching and illustrative value, and not as mere pictures. It is hoped that they will be studied equally with the text. The illustrations are largely selected from private collections, and thanks are due the following: Miss Ida E. Robbins, Miss Mary E. Calhoun, Miss Caroline W. Hotchkiss, and Miss Mildred Batchelder, all of *Teachers College, New York City;* Mrs. E. P. Telford, Brooklyn, N. Y.; William Bayliss, Cedar Rapids, Iowa; James B. Carrington, New York City; Doubleday, Page & Co., New York City; The Department of Agriculture, Washington, D. C.; The Detroit Photographic Company, Detroit, Mich.; N. L. Stebbins, Boston, Mass.; William H. Rau, Philadelphia, Pa.; and "The Outlook," New York City.

The thanks of the author are due his colleague, Miss Clara B. Kirchwey, who has given especial attention to the procuring of illustrations and who has prepared the Aids for Teachers and the Suggestions for Collateral Reading.

Critics. In the preparation of this book the author has had the critical assistance of Dr. J. Paul Goode, *Assistant Professor of Geography in the University of Chicago*, and Miss Ellen C. Semple, Louisville, Ky., author of "American History and its Geographic Conditions." Doctor Goode, as an authority on cartography and economic geography, and Miss Semple, as an author and a student of anthropogeography, and both as successful teachers, have been able to give very valuable help.

Each book has also had the criticism of two or more special critics who are successful teachers in the grades to which the book pertains. The special critics for the first book are Miss Amy Schüssler, *principal of the Speyer School of Teachers College*, and Miss Anna J. Stone, *principal of Grammar School No. 10, Binghamton, N. Y.* Both of these teachers have to do with pupils whose elementary training has not been of the best, and hence have been able to criticise the general adaptability of the text with especial accuracy.

All the critics have been painstaking and their suggestions have been most helpful and to the point. Special thanks are also due Miss Zonia Baber, of the *School of Education, the University of Chicago;* Miss Elizabeth Smith, of the *Chicago Normal School*, and Superintendent C. N. Kendall, *Indianapolis, Ind.*

Suggestions and detailed criticisms will be welcomed by the author.

RICHARD E. DODGE.

Teachers College, Columbia University, New York City, October, 1903.

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From a photograph by Henry Fuermann

A quiet stream slowly changing the surface of the land.

DODGE'S PRIMARY GEOGRAPHY

PART I

HOME GEOGRAPHY

I. *WHAT IS A HOME?*

What Home Means. Every child who goes to school spends his days partly in school, partly in playing or working, and partly, as he would say, *at home*. At home he eats, sleeps, plays perhaps with his brothers and sisters, and gets the clothes that keep him warm and dry. Here also he is cared for when sick.

Thus, home to most children means food, clothing, shelter, love, and a good time, and is the one place they like best.

Homes of Birds and Animals. People are not the only dwellers in homes, however, for the small birds and the wild animals have homes, but they do not always live in the same ones all the year. Every country boy knows the homes of certain birds. He probably has watched them build the homes and seen the way they live and the way the old birds feed the young birds and teach them to fly.

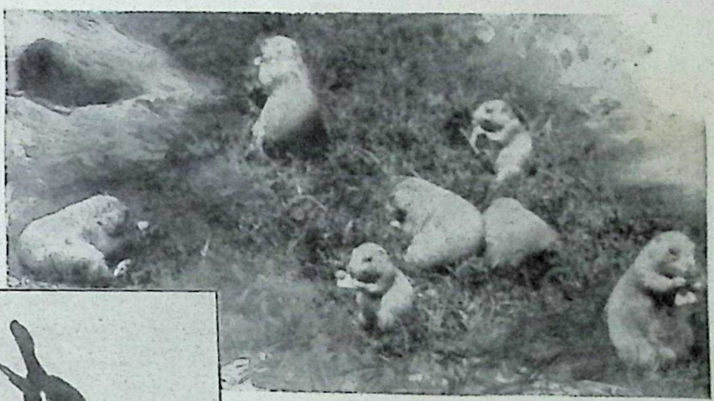

FIG. 3. *A family of prairie dogs and the opening to their home in the ground.*

Some birds, like the robins, the blackbirds (see Fig. 1), and the swallows, come back year after year and build their nests in the same tree, or barn corner, or black, sooty chimney. Until the young birds are able to fly and know how to look out for danger, *the nest is their home.* (See Fig. 2.) Here they are fed and cared for by the father and mother birds just as children are fed and cared for in their homes.

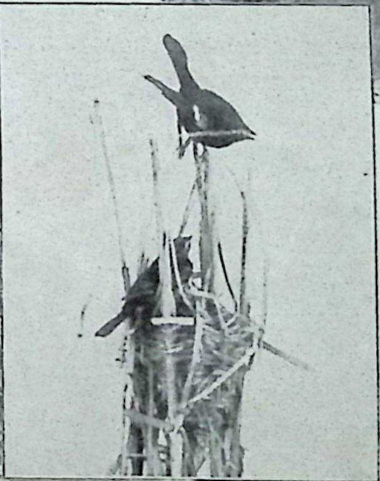

FIG. 1. *Blackbirds at home.*

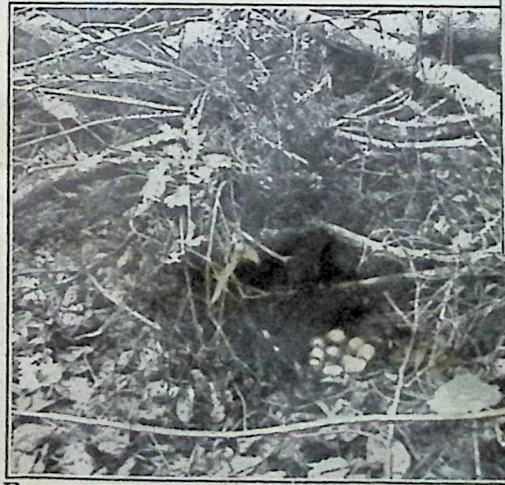

FIG. 2. *A bird home before the young are hatched. Notice the covering of twigs and leaves to conceal the eggs.*

The twig and mud shelters which the muskrats or beavers build, and the holes of the prairie dogs (see Fig. 3) and other

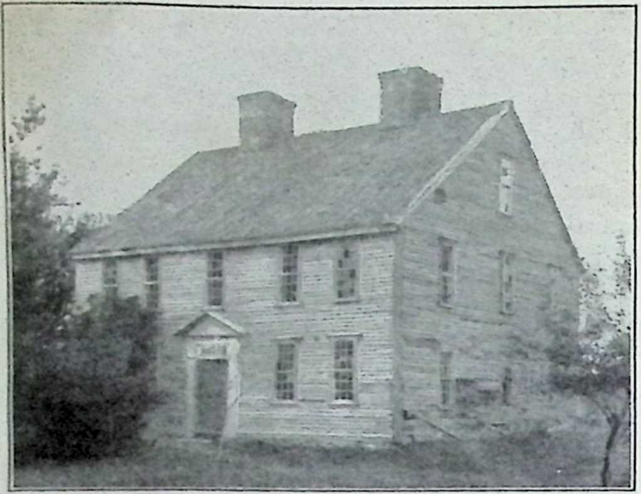

FIG. 4. *A deserted farmhouse. This is not a home because there are no people living in it.*

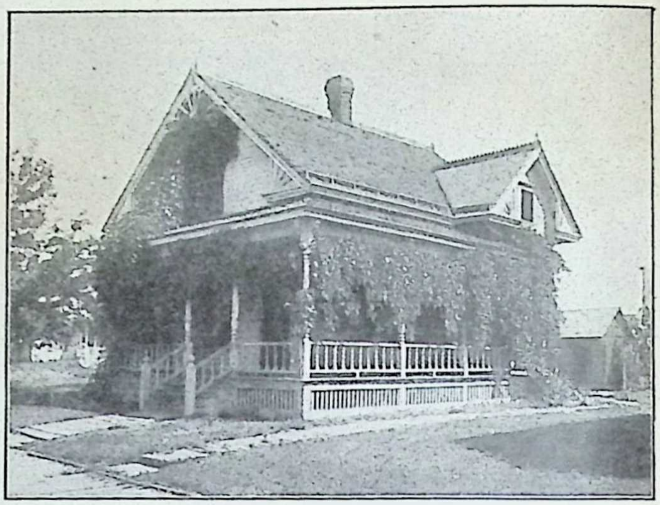

FIG. 5. *A typical village house in which a family is living. This is a true home.*

animals that burrow in the ground, are homes to them for the same reason that our houses are homes to us.

No matter to what country we go we shall find people living in homes. So, if we can find out why we live in homes, and what we do there, we shall be better able to understand other people who do many things that seem strange to us now, but who are busy earning a living in different ways.

Kinds of Homes. An old deserted farmhouse, such as one often sees in the country, is not a home. (See Fig. 4.) Neither is an empty city house or a vacant apartment a home. But they would become homes if somebody moved into them.

People are, therefore, a necessary part of every home, and a house is only a place for a family to live in and to make into a home. (See Figs. 5, 6, 243, 294, 306, and 308.)

Everybody lives in some kind of a *house*, to shelter him from the rain, the snow, the cold, and the heat. All houses, however, are not like the wood or brick houses that we know, because some people cannot get wood or bricks, and so have to use something else.

For example, some of the *Indians* of our own country live in houses made of cloth, or skins, or bark, or sometimes of earth and stones. (See Figs. 7 and 8.) Yet this house is the Indian's home. When the house is movable he carries it about with him from place to place.

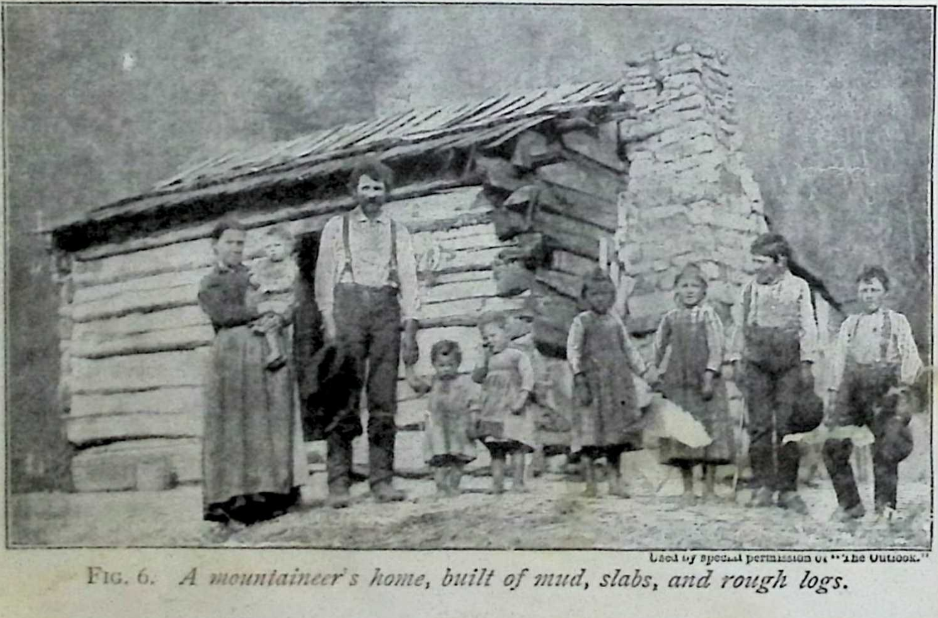

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FIG. 6. *A mountaineer's home, built of mud, slabs, and rough logs.*

Homes in Far-Away Countries. Some people make their homes in holes dug in the ground, and in the coldest parts of the world the houses are often built of snow and ice. We should think such homes very simple and rough, but the people who live in them are happy and far more comfortable than would seem possible to us.

These are only a few of the many kinds of houses that are used as homes in the far-away countries of which we shall learn more by and by. (See Figs. 120, 257, 322, 336, 353, and 371.)

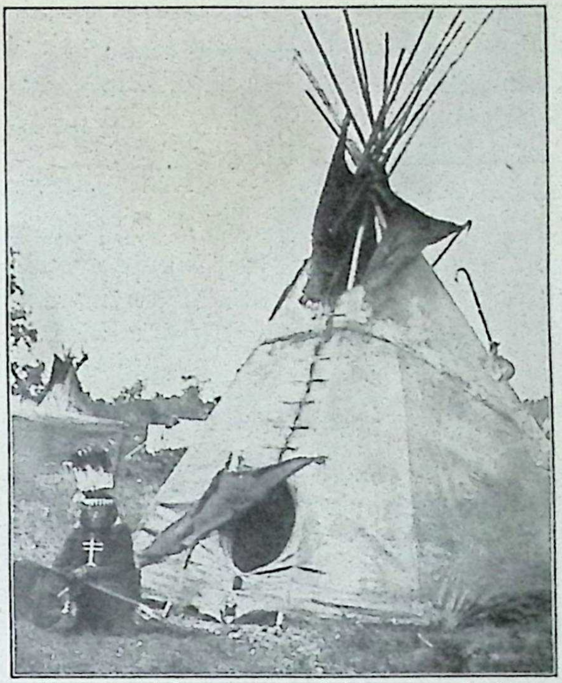

FIG. 7. *A house made of skins — an Indian home.*

In some of the homes we could visit we should find the children dressed in clothes that would look very strange and uncomfortable to us. The children would be playing strange games, and talking a language we could not understand. They would all, however, be living in homes and be eating, sleeping, playing, and learning how to take care of themselves.

Suggestions for Review

(1) Name as many things as you can that you do at home. (2) Describe any animal homes you have seen. (3) Watch some birds building a nest in the spring and tell all you can about what they do. (4) Collect some *old* birds' nests if you can and describe them. (5) Describe some homes that you have read about. (6) Collect pictures of different kinds of homes.

II. GRO[illegible] HOMES

Village, Town, and City. In some places it is a long way from one house or home to the next, but usually several families live near together.

If there are only a few houses in a place, we call it a small *village* or *hamlet*. If there are many grouped together, it is a *town*. If there are many hundreds of houses close together in a small area, it is a large town or *city*.

In the United States about one-third of all the people live in large towns or cities.

How Cities Begin. In a small village the homes are often grouped about *four corners* where two roads cross. (See Fig. 9.) People traveling along either road have to pass by the four corners, and so twice as many people pass this point as go along either road. Thus the four corners can be easily reached by many people and is a convenient place for a store, a blacksmith shop, a schoolhouse, a church, a post office, or for any other building that many people need to use.

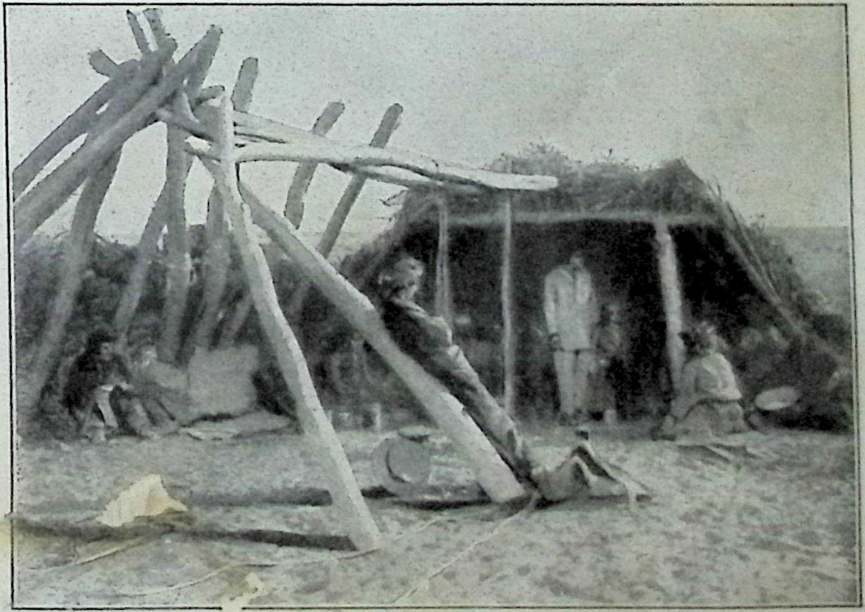

FIG. 8. *A house made from brush, showing the framework of logs. The brush is laid on the side toward the sun.*

Such a village may be the beginning of a large town; in fact, many of the large towns and cities of the United States have grown from small villages at cross-roads corners.

Reasons Why People Live in Cities. As we walk or drive along any of the roads leading from such a village, we find the houses farther and farther apart and more land about each house. The house is usually near the road, but the land belonging to it extends far back from the road. In villages we nearly always find that every house has a small lawn in front (see Figs. 5 and 10) and a vegetable or flower garden behind.

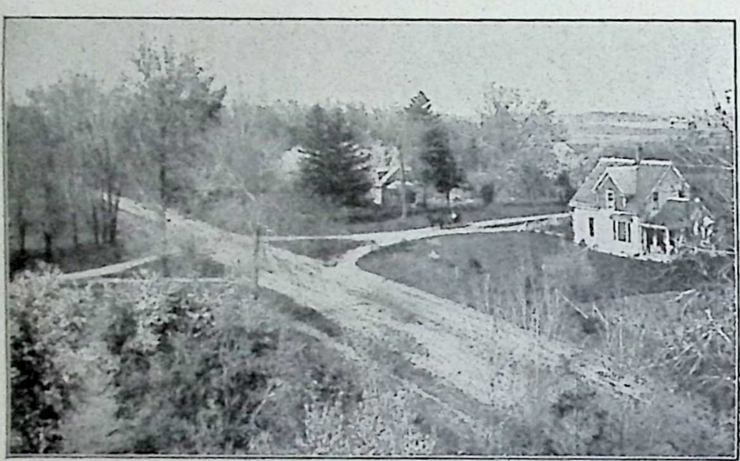

FIG. 9. *A cross-roads or "four corners" with homes grouped about it.*

In large cities there are frequently so many people living on a small piece of land that there is no room for a garden or lawn, although there is usually a small back yard to each house.

In some cities many of the houses are different from those in villages or in the country, being built to hold many families. One house may be four or five or more stories high, and may contain many families living on a piece of ground that would seem small for one family in the country. (See Fig. 11.) In the same way the business blocks are built in stories so that hundreds of people can use one building.

People live close together, as a rule, *because it is more convenient* to be near the stores, the schools, and the post office, and because they can *do business with one another more easily* than they could if they lived far apart.

Suggestions for Review

(1) Do you live in a village, town, or city? (2) How do you know this? (3) Mention all the buildings near your home that are used by many families. (4) Are these buildings close together or are they scattered? (5) Are the buildings in the center of the town you know best higher or lower than those on the edges of the town? (6) How high a building have you seen? (7) How many people lived or worked in it? (8) If you were going to start a store in the country where should you want it placed? (9) Mention some things you have seen growing in a garden or in a city yard. (10) What is the chief reason for the existence of your town or village?

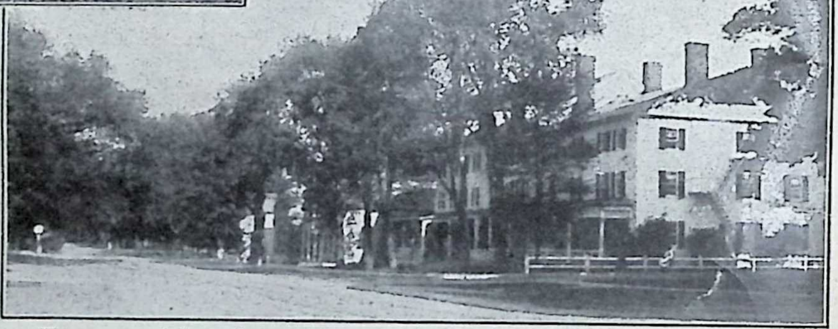

FIG. 10. *A broad street in a town. This town has grown from a hamlet at a cross-roads.*

III. STREETS AND ROADS

The Need of Roads. Persons need to travel quickly from one place to another, in order not to lose any time in carrying on their business. So the houses in most places are arranged along a street or road which *connects* them. In large villages or towns, where all the land must be used, the houses are on streets that cross one another, so as to leave squares with streets on all sides. (See Figs. 12 and 35.) In such cases the streets are named and the houses numbered, and it is easy to tell where a person lives.

In a newly settled country where the homes are far apart and where there are few people to travel from house to house, there are no broad roads or streets. Instead there are narrow paths or *trails*, sometimes only wide enough for a man on foot or on horseback.

The Roads of Animals. Before the white people came to our country it was occupied only by the animals and Indians. Animals need roads or paths to get from place to place as much as men do, for they usually get their food in one place and their water in another. (See Figs. 13 and 14.)

In some cities the streets that people now travel over were once only paths made by cows going back and forth to pasture when the city was a small town or village.

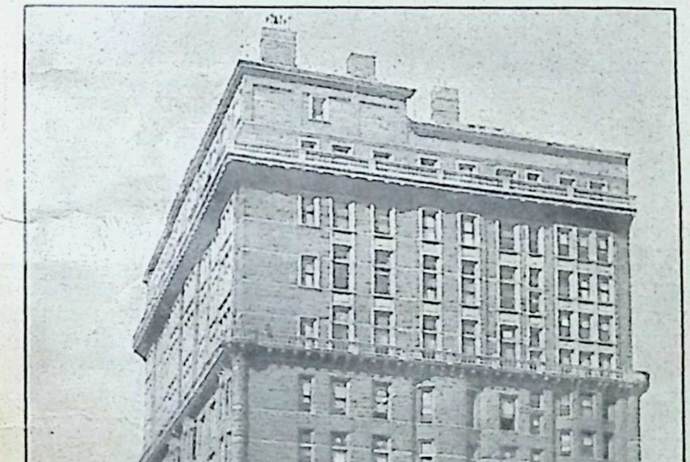

FIG. 11. *A tall city building in which many people have their homes.*

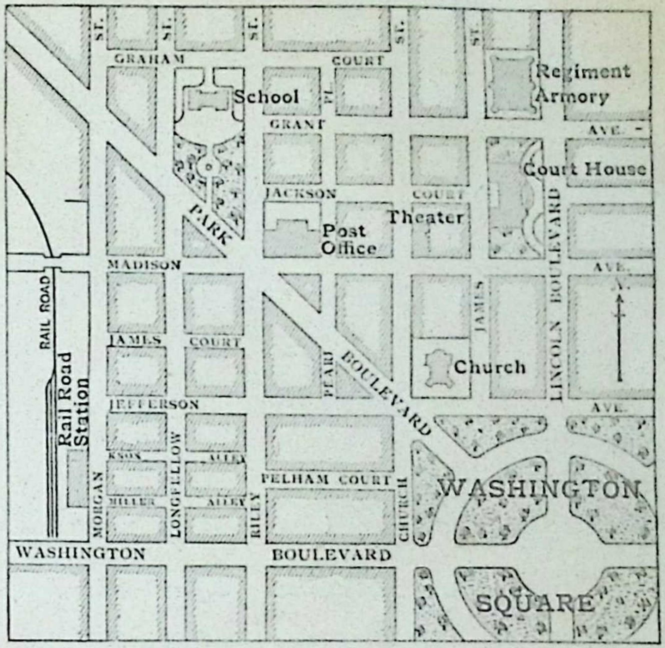

FIG. 12. *A plan of the streets, blocks, and squares in the center of a city.*

The herds of buffaloes that formerly lived in great numbers in the central part of the United States made such deep paths or trails as they traveled back and forth that the trails can be seen now, many years afterward. (See Fig. 14.)

The paths that lead from an ant's nest or from the hole of a groundhog or woodchuck, which may be seen by almost any country boy, are roads to the animals that made them, and are used just as men's roads are.

Branching Roads. Such paths branch a short distance from the home, because not all of the animals want to go to the same place for food.

In large towns, as we have seen, most of the streets are arranged in squares, because all of the land can be used for houses if the streets are laid out on a regular plan. Farther from the town, however, the roads will branch, just as the cow paths or ant trails do, one branch leading in one direction and the other in another. (See Figs. 13 and 15.)

At the point where the roads divide, which is often called a *corner*, there is usually a guidepost that shows where each road leads to and how far it is to that place.

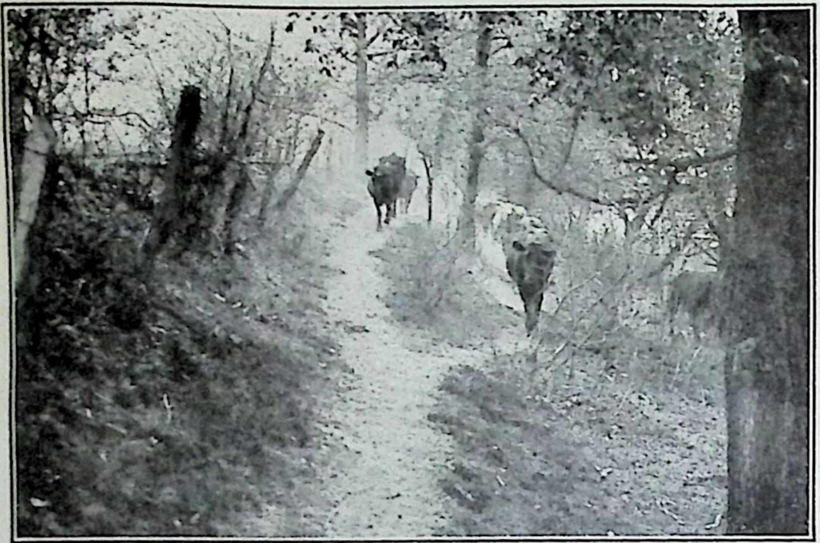

Fig. 13. *A path made by cattle in passing to and from the river for water. Notice how two paths come together.*

(See Fig. 16.) Such guideposts are conveniences, like the roads themselves, and help people to get from place to place.

Why Roads Should be Well Made. The streets in a large town or city are used by so many people that they are often crowded, and for this reason they need to be wider and better than most country roads and paths. (See Fig. 17.)

Many streets in large towns and cities are covered with material that will wear better than the earth which is used in country roads. Streets that are used by heavy teams are often covered or *paved* with blocks of stone set on end or with bricks. The little cracks between the stones make it easier for horses to get a footing so that they can pull hard.

Streets that are for carriages or bicycles are made as smooth and hard as possible, so that the people riding over them will not be shaken too roughly.

A good road or street is not made flat, but slopes from the middle toward the sides. (See Fig. 18.) This is done so that the rain or melted snow will not run down the middle of the street, but along the sides and out of the way of the horses and carriages. Country roads do not need to be paved because they are not used so much as city roads. They should, however, be made of material that will wear well. (See Fig. 19.)

City Streets. As the running water would wear the city streets, *gutters* are made at the sides to carry off the water, just as we often put gutters on a house to catch the rain from the roof.

If the city street is a long one, openings are made at the corners, and often in the middle of the blocks, for the water to run down under ground into a large pipe or *sewer* that carries it away.

In most towns and cities the *water* which people use in their houses and the *gas* which they use for lighting or heating are carried under the streets in *pipes.* Usually there are places near the edge of the sidewalk where the water can be turned on to put out fires or to clean the street.

Sidewalks. As the streets are often crowded with carriages and horses so that it is not safe for people on foot, a part of the street is divided off for walks, which are made along the sides. These *sidewalks* are often paved with bricks or some other hard

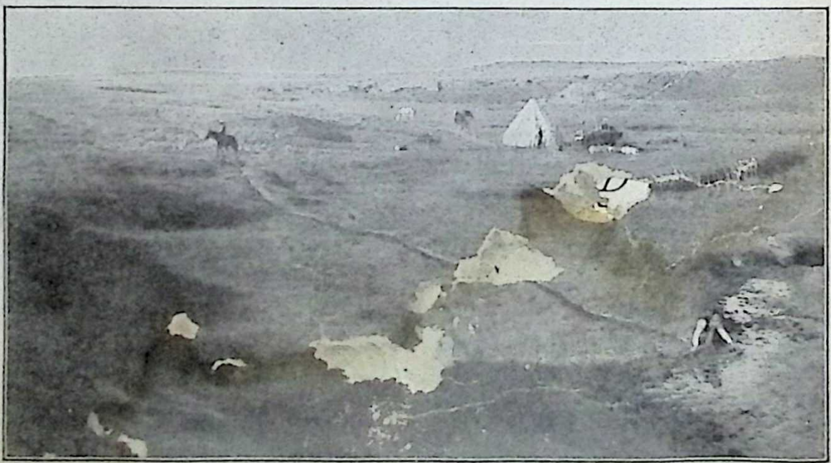

Fig. 14. *A buffalo trail, made by the passing of buffaloes in single file to the stream for water.*

material that will not easily wear out. (See Fig. 17.)

In the country, where the roads are not crowded, children walk to school along the sides of the roads or in paths across the fields, but in a town or city they follow the sidewalks and are supposed to cross the streets only at the corners.

Street Lighting and Cleaning; The Police. In many towns and cities the streets are used a great deal at night, and have to be *lighted*, so that people will not get hurt or lost as they go from house to house after dark.

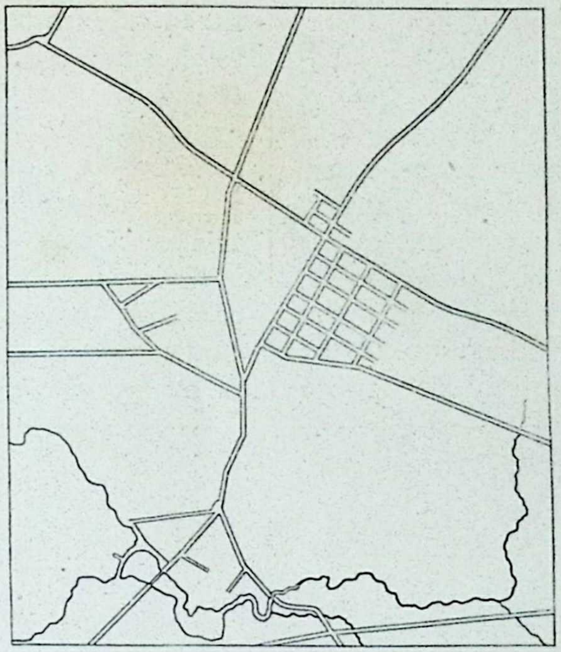

FIG. 15. *Plan of a village showing cross roads, branching roads, and regular arrangement of the village streets.*

If a street is a busy street it has to be kept *clean*. In many cities men known as street cleaners work all day, and sometimes all night, sweeping up and carrying away the dirt and rubbish.

Just as there are street cleaners in a city, so there are *policemen*, who are in the street to help people, especially when there is an accident, and to keep order.

Cost of Caring for the Streets. It costs a great deal of money to care for streets, because there are many different kinds of things that must be done to keep a street in order.

If every person were obliged to take care of the street and sidewalk in front of his own land or house, he would have little time or mon[illegible] any other business, and some pieces of stre[illegible] would be good and some bad, so that [illegible]ing would be difficult or even dangerous.

Suggestions fo[illegible]

(1) Do you live in t[illegible] country? (2) On a street or on a road? (3) What is your whole address? (4) Why is it important to know your address? (5) With what is your street or road covered? (6) In what part of it does the rain-water run? (7) Mention anything that is a part of the street you know best, but which has not been spoken of in this book. (8) Study the roads of an ants' nest and make a drawing to show the paths the ants take going back and forth. (9) Watch cows as they go to pasture and see if they follow a path. (10) Watch some ducks or geese going to a pond and describe their route. (11) Why do certain parts of the carpets or floors in your house wear away faster than others? (12) What parts of a street would therefore need the most repair? (13) How is the street about your schoolhouse kept in repair? (14) Describe a path along which you have walked and compare it with a street. (15) Tell about some roadmaking you have seen. (16) Draw a picture showing how a road slopes. (17) Is your street lighted, and if so, how? (18) How can children aid in street cleaning? (19) Why must people drive over street crossings slowly?

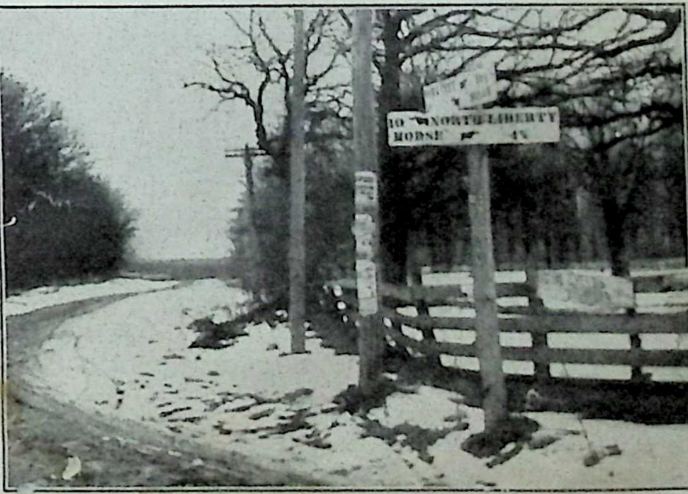

FIG. 16 *A [illegible]epost at [illegible] country "cross-roads" showing the w[illegible] four villages.*

IV. THE NEED FOR GOVERNMENT

Why People Elect Town Officers. It has been found *better* and *cheaper* in all large towns and cities to choose a certain number of men to control all the things that every one must have, such as streets, lights, schools, and parks. Each man in town, who owns any property, gives a certain amount of money each year to help pay for these things. This money is known as his *tax*. The men who have charge of town or city affairs are known as the city or town officers, and form the *government*.

In large cities the government is made up of many men, while in small towns there may be but a few men, perhaps only three, chosen to take charge of the government.

The man who is chosen as head of the government of a city or large town is usually known as the *Mayor*.

Town or City Laws. In most places certain of the men who form the government make rules, or *laws*, which all people in the town must obey. These laws may forbid the people to ride bicycles on the sidewalk, or to let their cows or pigs go loose on the street. They may indicate which streets can be used for heavy wagons or for electric cars.

There are so many things that a man cannot do for himself, but which a few men can easily do for all, that a *government is necessary in all places where large numbers of people live.*

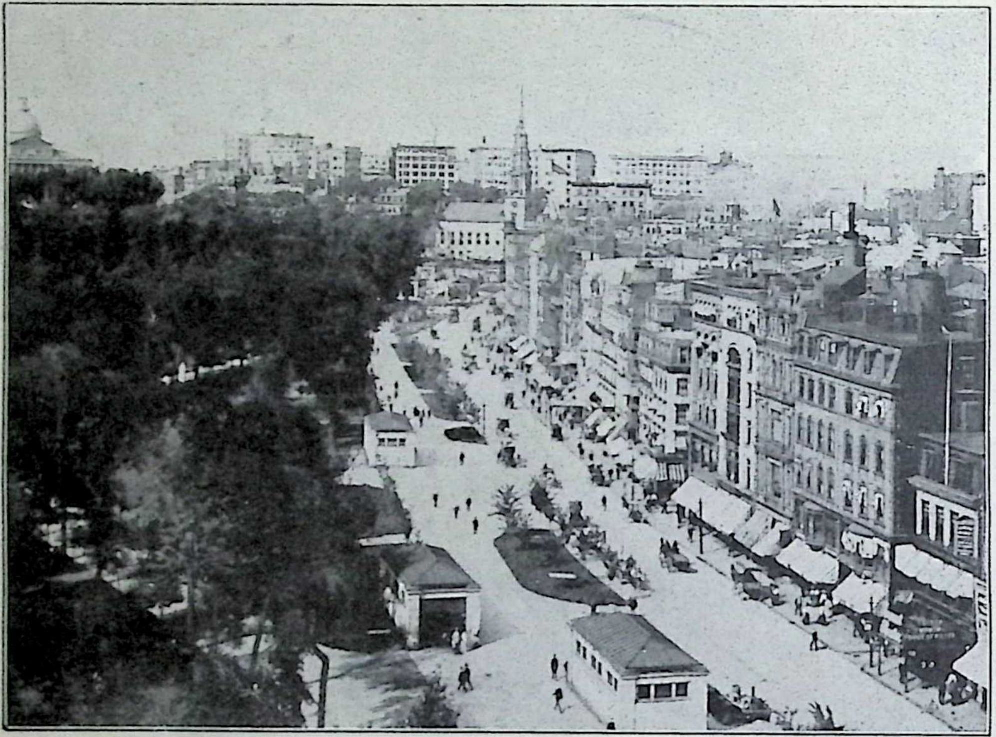

FIG. 17. *A paved city street, showing the broad sidewalks and tall buildings used for stores and offices. A city park is shown at the left.*

Government in the Home. Every child knows about government in his own home, for there are certain *rules* that must be obeyed, just as there are rules or laws in a city or town.

In the home the mother usually cares for the house and sees that the food is cooked and the meals prepared; the father works perhaps away from home at some business, and earns money to pay for the necessary food, clothing, and fuel. Sometimes each child has certain work to do each day, which is his part of caring for the home.

The work of the house is divided among the members of the family just as the work of caring for the city is divided among a number of men, each having a special task. Thus a home is a little government, the [illegible] of government there is, and [illegible] ild knows in his every- [illegible]

The State Government. Just as many people unite in selecting the officers of their home region, so many neighboring places,

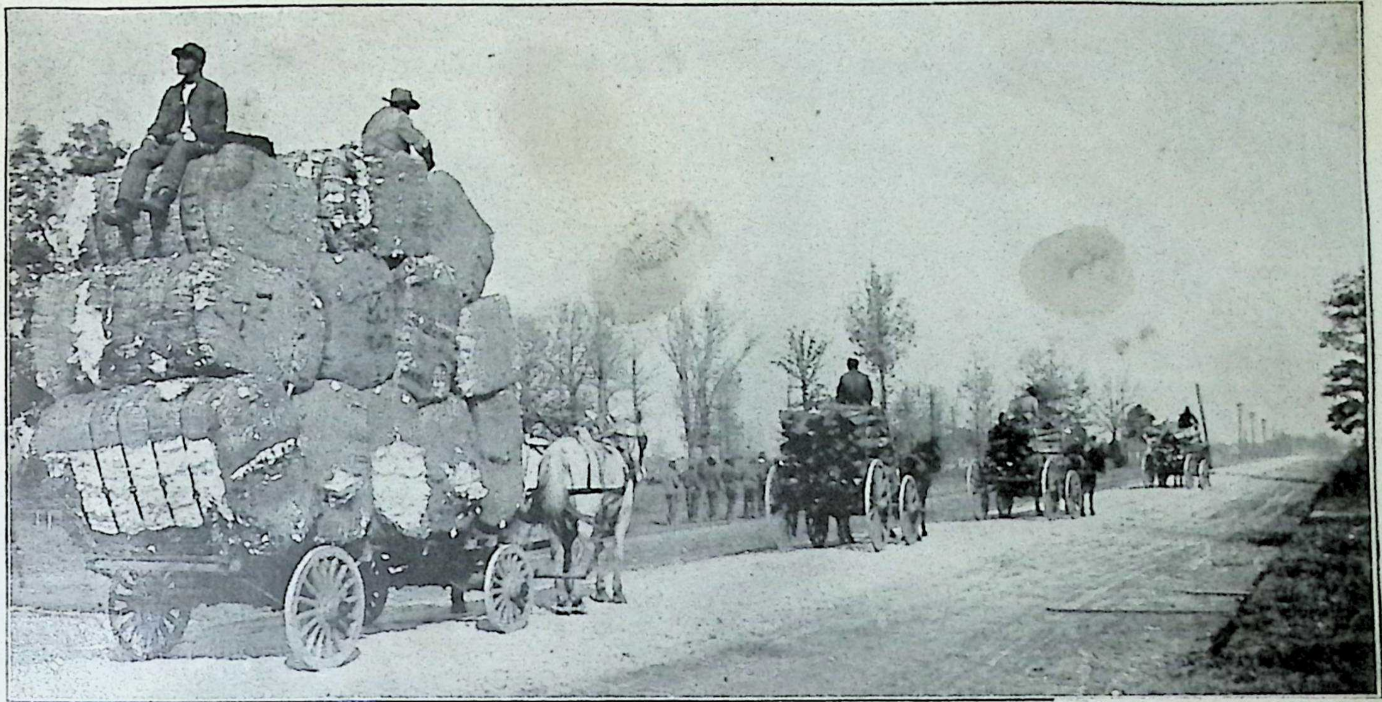

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FIG. 18. *A hard, well-paved road. Over such roads heavy loads of cotton and timber are easily drawn. The sloping sides aid in carrying off the surface water.*

covering a large amount of country, unite and form a *state*. The officers elected to form the state government make laws for all the people of all the cities, towns, villages, and smaller country settlements of the state. The state officers meet regularly at some city in the state, which is known as the *capital* city; the building in which they carry on their business is known as the *capitol*. (See Fig. 20.)

The state government fixes by law what a man must do in order to *vote*, that is, to help select town, county, or state officers. [illegible]tate laws also fix the time when certain animals may be hunted and certain fishes may be caught, and the state government manages many things, like prisons, hospitals, and canals, that are useful to all the people in the state.

FIG. 19. *A good country road made of [illegible] stones and gravel.*

The chief officer in the state government is known as the *Governor*. The Governor usually lives at the capital city.

The United States Government; The President. All the states of this country choose men to manage the things which every one in the country is interested in. Our country, which is made up of all the states, is called the *United States*. Thus the highest form of government in our country is the United States Government.

Such a government is known as a national or federal government, and the states of the national government form the

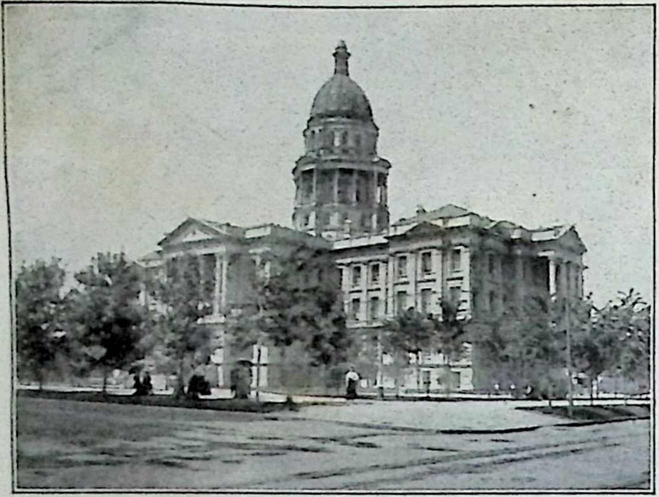

FIG. 20. *A state capitol in which the state officers meet to make the laws.*

nation. Consequently whenever the nation is spoken of we mean the United States.

The man chosen by the people once in four years as chief officer of the United States Government is called the *President.* He has many men to work with him, some of whom are chosen or elected by the people, while others are selected by the President and the leading men who assist him.

What the National Government Does. The United States Government manages the Post Office Department, which arranges for the sending of letters to all parts of the country. The Post Office Department is the part of the national government that everybody knows the best, because nearly everybody receives or sends letters. The Post Office Department is, however, but one of very many ways in which the national government serves all the people of our land. Certain other ways in which we are helped by it will be seen when we study the different parts of our own country. The United States Government also manages the business between our national government and other national governments.

Though other national governments may differ from ours in some ways, *governments are all alike in being necessary, because large numbers of people living together need laws to control them and help them.*

Suggestions for Review

(1) What officers are there in some school club you are interested in? (2) What do they do? (3) How are they elected? (4) Mention all the things you know that are managed by your town or city. (5) What is the building called where your town or city officers meet? (6) What would you go to that building for? (7) Find out if there is any form of government in your state not mentioned here. (8) Mention some town or city laws you know about. (9) What punishment would come to you if you disobeyed these laws? (10) Who is the governor of your state? (11) How often is the governor elected? (12) When is election day? (13) Why is election day usually a holiday? (14) Mention some things that your state manages for all the people. (15) Who is the President now? (16) Find out some of the officers he appoints to help him. (17) What other things than the Post Office do you know to be managed by the United States Government? (18) Have you ever seen an officer of the national government? (19) What office does he occupy?

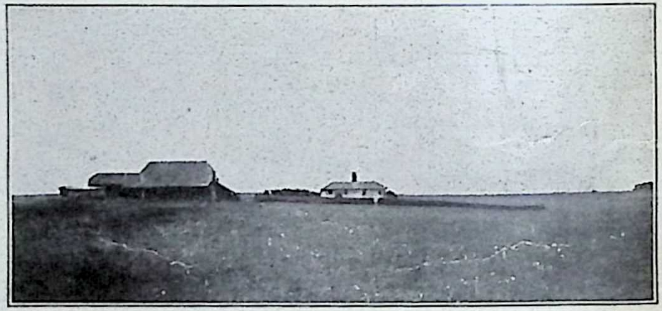

FIG. 21. *A solitary farm situated on a level plain or prairie.*

~~Bonny~~

V. THE SURFACE OF THE LAND

Where Houses are Built. We have seen that houses are necessary for making *homes,* and that roads and streets *connect* houses or different places where people live.

Houses and streets are built on the *surface* of the land, but the way the houses are grouped and the way the streets run varies, because the surface of the land differs greatly in different places.

Every house has a certain amount of land about it, though in some cases it is very small. On at least two sides of every house, however, there is an open space. This gives a chance for the sunlight to strike the windows, for the air we breathe to move freely, and sometimes room for a garden in which vegetables can be raised, or for a little grass plot (see Fig. 5) which can be used as a playground for children.

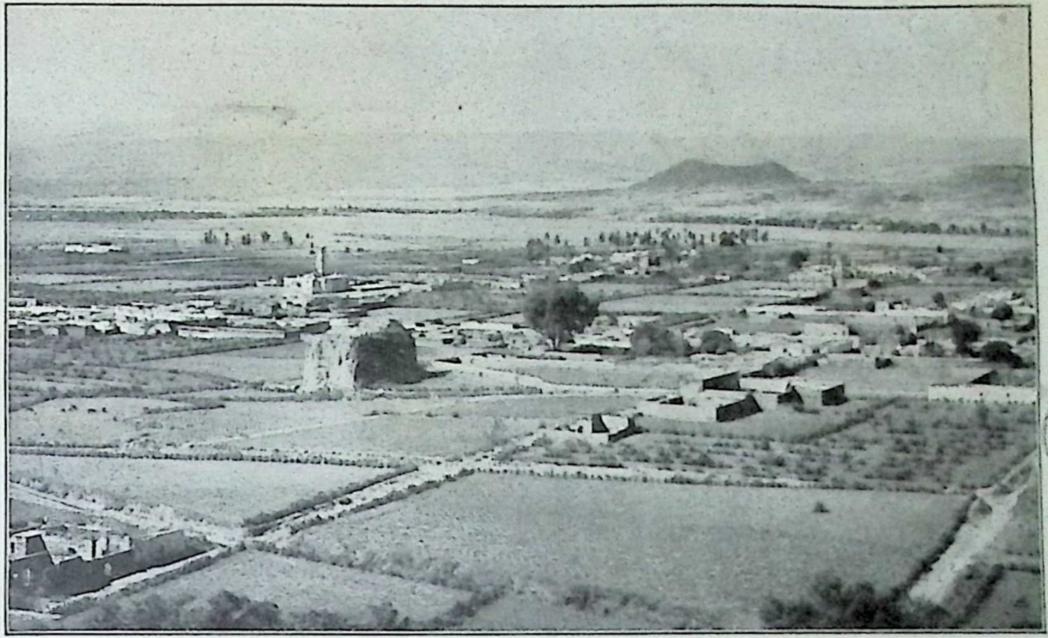

FIG. 22. *A town built on a plain where one can see many miles in every direction. Notice that the roads are straight and level.*

Plains. Every child in going back and forth between his home and the school, the church, or the woods, goes over the land, but the view or *landscape* which he sees is very different in different places.

The path or road which he travels over may be both straight and level in those parts of the country where the land is smooth and even. (See Fig 22.)

In such regions one can see a long way in all directions, as few heights or *hills* rise above the lower land to shut out the view. Such broad, flat regions are called *plains*, and a large part of the world has a surface that is more or less like a plain. (See Fig. 21.)

On plains the roads and railroads may be straigh[illegible] for miles, which makes easy to travel in alr[illegible] any direction. In [illegible]ch places the farms are often very large, sometimes so large that it would take hours to ride around one of them. (See Figs. 21 and 73.) This makes the homes several miles apart, and people can visit one another very rarely. They live lonely lives unless they have a telephone to use in talking to their neighbors.

Rolling Land; Hills and Valleys. In other places the land surface is uneven and is called *rolling*. (See Fig. 23.) In such a country one can see heights or hills and the lowlands or valleys between. But there are no distant views except now and then from a hilltop.

The hills *slope* down to the valleys. In those parts of the country where there is much snow in winter, children often coast down the slopes of the hills out upon the gentler slopes of the valleys. A coast of a minute or two may be so long that it takes them several minutes to walk back.

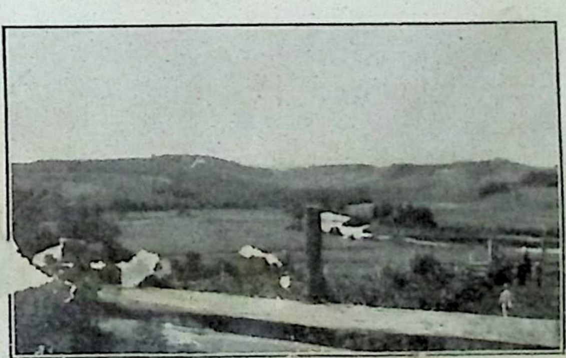

FIG. 23. *A picture of a rolling country showing a valley and hills.*

People traveling on foot or with a horse try to go on good roads that h[illegible]ve gentle slopes.

The roads are built in

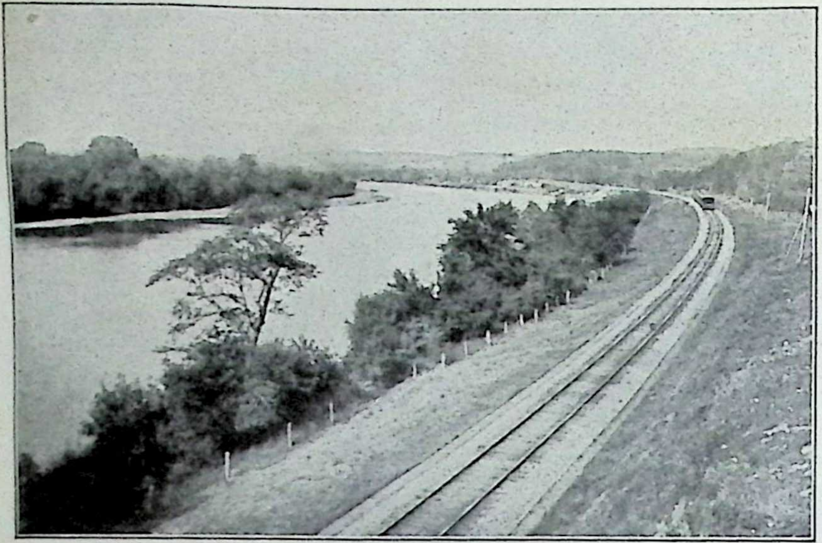

FIG. 24 *A railroad built on the low, level land along a narrow river valley.*

the valleys as much as possible (see Fig. 24), but when a road has to go over a hill it ascends where the slopes are gentlest and crosses the hill where the ridge is lowest. Sometimes the road winds back and forth on the side of the hill so as to make climbing easier. Traveling, therefore, over a rolling country is not so easy as over a flat country.

Homes in a Rolling Land. A rolling country is more beautiful than a flat country, and in some ways is better to live in. (See Figs. 21, 23, and 25.)

In many regions there are farms on the lowlands and on the gentle slopes, with pastures for cattle, sheep, and horses on the steeper slopes, and woods and forests on the steepest slopes of all. The houses and villages are often nestled in the valleys (see Fig. 206) where the wind is not so strong as on the hills. When there are only a few houses in a valley they are usually built on the side that has the morning sun.

At sunrise and sunset the hilltops are often in the sunlight, while the foot of the hills and the lowlands are in deep shadow. Thus the daylight lasts somewhat longer on the hills than in the valleys.

At noon the depths of the valleys are bathed in sunlight, for the [illegible] then high above the hills.

DEFINITIONS

A plain is a large area of land whose surface is nearly flat.

A hill is a small mass of land rising above the lower land about it.

A rolling region is made up of gentle slopes and contains many hills.

A valley is a lowland which slopes up to higher land on both sides.

Suggestions for Review

(1) Describe the landscape about your own home. (2) What kinds of slopes do you pass over between your school and home? Are they gentle or steep? (3) Describe the view you have seen from the top of a hill. (4) What sort of a slope would you prefer to coast over? (5) Mention and describe some valley you know. (6) How do the roads run in the valley? (7) Where are the houses? (8) Mention something you have seen in a valley that has not been mentioned. (9) Where would you expect to find good farming land? (10) If you were to build a large fire on the Fourth of July where would you place it so as to have it seen for the longest distance? (11) Why is it wiser to plant crops in the lowlands or valleys, and leave the steeper slopes for pastures and forests? (12) Why would pioneers or settlers be apt to follow the course of a valley? (13) Would you prefer to have your home in a rolling country rather than on a plain? Why? (14) Why are houses built on the side that has the morning sun?

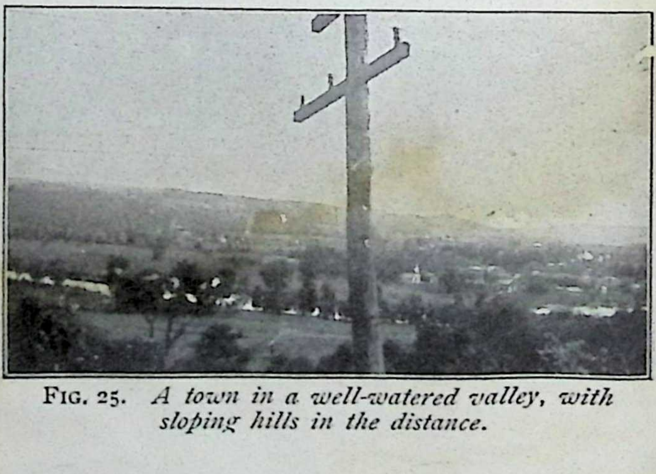

FIG. 25. *A town in a well-watered valley, with sloping hills in the distance.*

VI. THE SURFACE OF THE LAND (Continued)

Mountains. In some regions the slopes are very steep and long, and the lowlands are far below the highlands. Such a country is very rough and full of ups and downs, or, as we often say, it is *mountainous.* (See Figs. 26, 27, and 28.)

Mountainous regions are usually made up of a number of different *mountain ranges,* with lower land lying between. Any point in a mountain range rising above its neighbors is known as a mountain *peak.* (See Fig. 29.)

The great highlands we usually call *mountains.* (See Fig. 26.) The slopes may be so steep that nothing, not even a sure-footed goat, can climb them, and the mountain may be so high that people have never been able to reach the top. The most dangerous slopes are those that are almost straight up and down, like a wall, and form a *cliff.* Mountainous regions usually have many cliffs that make mountain-climbing a dangerous sport, only to be enjoyed by those who have little fear of falling.

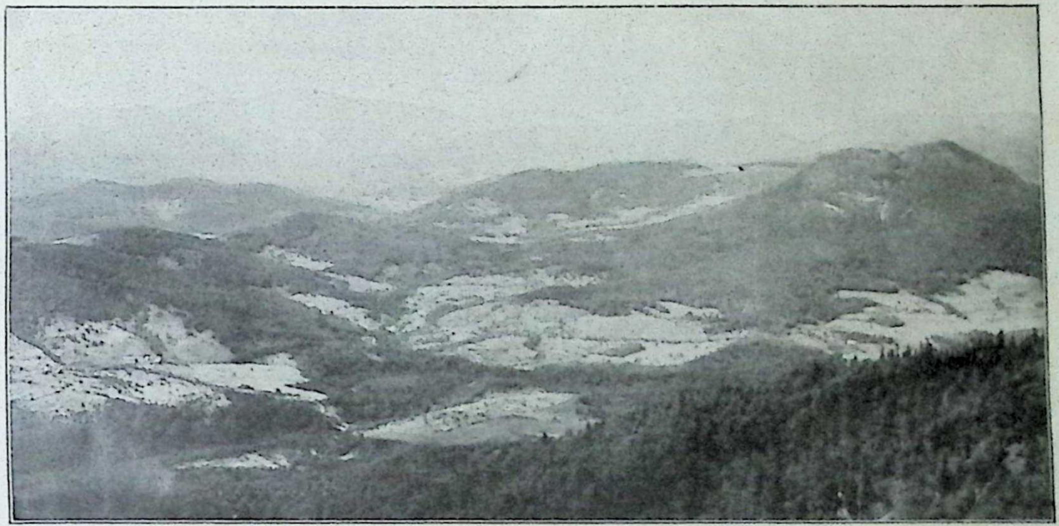

Fig. 26. *A view of mountains and highland valleys with a mountain range and peak in the distance.*

Highland Regions. Some regions have so rugged or rough a surface that it is impossible to cultivate the soil, and very few people can find places where they can earn a living except perhaps by hunting wild animals or by digging from the ground valuable minerals like silver and gold.

If the highlands are covered with forests, they are usually the homes of wild animals like bears, wild goats, mountain lions, and other animals that are hunted for their flesh or furs. Sometimes a highland region is so rough and the roads or trails are so little used that a stranger does not dare go through the region alone. A traveler has to have a guide who knows the way, for there are no houses or guideposts or other helps to show the right road in any direction. Sometimes there is no road and the traveler must make a path for himself. For these reasons the great highlands contain few people, and many of them are but little known.

Plateaus. If a region is very high and rather flat-topped, it is known as a *plateau.*

In certain parts of our country there are very large and high plateaus, in which are some of the largest and deepest valleys in the world. (See Fig. 191.) Though the valleys are very large, they occupy but a small part of the plateaus as a whole, and hence most of the surface is high and unbroken. The valleys in the plateau region are so deep and have such steep sides that the roads and railroads can follow only certain routes. They cannot be built in any direction, as they usually can be on a plain.

The people of the plateau region travel mostly on horseback, because a horse can travel easily over a country that no wagon could get through. The Indians who live on th[illegible]au region of the United States are [illegible]mous horsemen. Every one rides (see

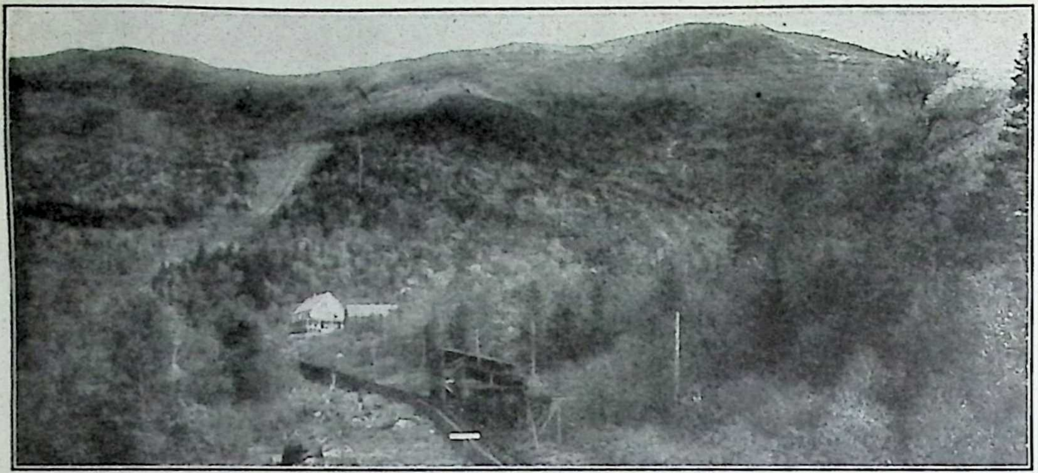

FIG. 27. *The White Mountain Valley, with Mount Washington and the White Mountain Range in the background.*

Fig. 31), the little boys and girls beginning to ride when they are so small that they have to be strapped to their horses to keep them from falling off.

City and Country Landscapes. In the country a boy or girl can see the slopes of the land and tell whether it is hilly or flat or rugged. Children in large cities and towns are not always so fortunate, for the houses may be so many and so near together that only a few people can look off to the rolling hills or level fields.

In large cities, the ground of the streets and sidewalks being all paved with stones or bricks, we do not see the earth beneath, except when a trench is dug for a new water or gas pipe or a street railroad.

If the city is built on hilly ground, some of the streets will have slopes, and those that are very steep will not be much used.

In many cities and towns are certain plots of land covered with trees and bushes and rocks, which are kept as *parks*. (See Figs. 12, 17, and 32.) Such parks are delightful playgrounds for children, and places for people to rest in the fresh air.

Before the white men came and built cities and towns wild animals roamed everywhere, and large parts of the country were covered with forests and wild flowers like a park.

Now if it were not for the parks the city child would have no chance to see the plants and wild animals, the beautiful trees and valleys without going far from home.

In the country every boy knows where to find spring flowers and nut trees and the kind of place the groundhog or rabbit likes best for his home. The boy may not be able to describe his home region in the words used in this book, but he has a picture of it in his mind and knows all about it.

Although the country boy has learned perhaps from the land, the flowers, the birds, and the bees some things from Nature which the city boy has not; and the country boy may possess some advantages for such study that the city boy does not, yet the parks, the gardens, and the museums afford the city boy many opportunities to learn the lessons taught in Nature's books.

FIG. *A very mountainous country, with snow-capped ranges and deep valleys.*

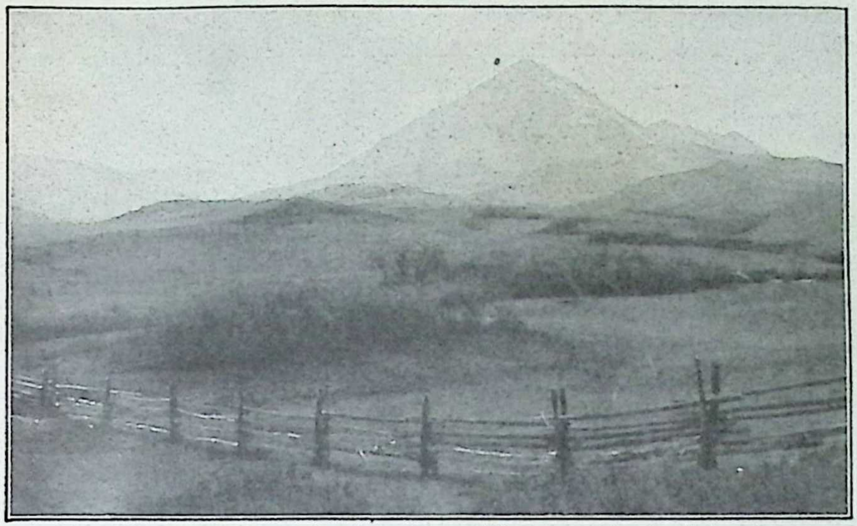

FIG. 29. *An upland valley, with mountain peak in the distance.*

A plateau is a very high mass of land with a nearly level surface. It is usually bordered on at least one side by a cliff or series of cliffs.

Suggestions for Review

(1) Describe a mountain you have seen, or a picture of a mountain. (2) What grows on the mountain? (3) Do any people live there? (4) Would you expect to find more roads or more paths on a mountain? Why? (5) Find out why bears are good mountain climbers. (6) Why is it very hard work to climb a high mountain? (7) Why is a cliff often a good place to build a fort? (8) What kind of a view would you get from a hill on a plateau? (9) Compare it with a similar view on a plain. (10) Find out something about the life and customs of Indians. (11) Were there ever any Indians in your neighborhood? (12) How do you know? (13) Find out about some very famous Indian. (14) Describe a park that you have visited. (15) If there were hills in the park what grew on them? (16) Were there any streams of water and where were they? (17) Who owns the parks in a city? (18) Why is a cable car safer than a horse or electric car on steep slopes? (19) See if you can find out in what city of this country cable cars were invented.

Where Cities are Built. Large cities are not usually built where the surface is very rough and the slopes very steep, because people cannot get about easily in such a region. People live on the gentle slopes of the lower land and do not build on the hills until nearly all the lower land is covered. (See Figs. 30, 34, and 35.)

One large city in this country was built on some hills so steep that horses could not pull a load to the top. Much of the land in the city could not be occupied until a man invented a car that could be drawn along by a large wire rope or cable moving in a slot under ground. The hilltops in that city are now covered with houses and the car proved so useful that cable cars are now used in many places where there are very steep hills (see Fig. 39), and in some cases where the land is level.

DEFINITIONS

Mountains are very high masses of land with extremely irregular surfaces and many long, [illegible] slopes. Mountains usually occur in ranges. and a point rising above the range as a whole is a mountain peak.

A cliff is a nearly vertical slope that extends for some distance.

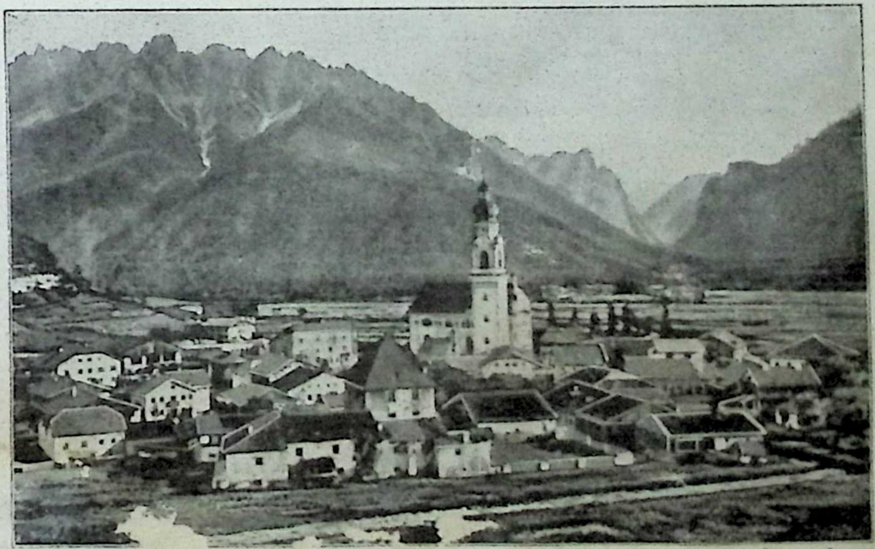

FIG. 30. *A village in the mountains, situated thousands of feet above sea-level, on the flat plain between high mountain peaks.*

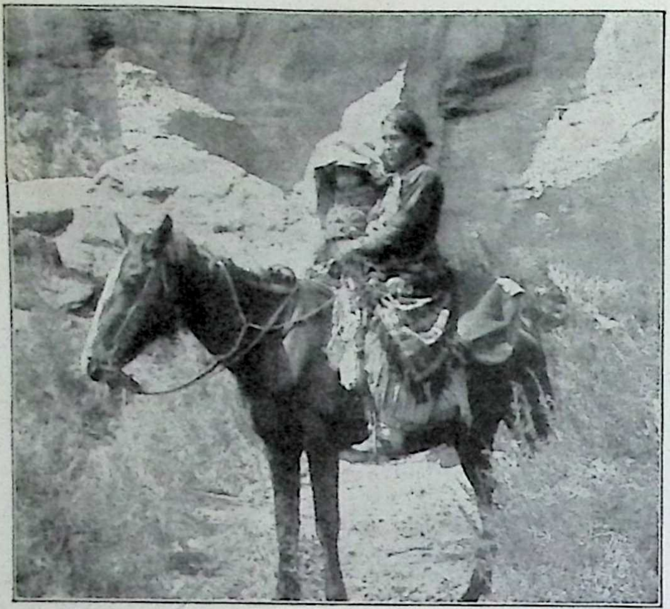

FIG. 31. *An Indian woman with her papoose on horseback.*

VII. THE WATER ON THE SURFACE OF THE LAND

Running Water. We have talked about the *slopes* of the land, the valleys and the hills, but we have not yet mentioned a very important thing that we see in almost any valley, and with which every child likes to play—that is, the *running water.*

On any day when it rains, or when the snow is melting, we find the water running over the ground and always *down hill.* If the slope is steep, the water runs fast; if it is gentle, the water runs slowly.

Where two slopes meet there is a *stream,* and as all land surfaces slope, though perhaps very gently, streams are common. We can often see the water running down the roof of a house or into the gutters in a thin sheet, just as it runs down a hillside or along a street. Where two house roofs meet we have a stream, formed by the sheets of water coming together.

Water in Earth and Air. Not all the water, however, that falls to the earth as rain or snow collects in streams. Much of it is retained in the ground, and some of it remains in the air. When we can feel the water in the air we say the air is damp, and a handful of earth is usually moist from the water in it.

The earth contains a great amount of water, and men who go down into deep mines always find it there. In most mines pumps have to be kept running all the time to prevent the water from filling the mine to the surface.

Uses of Water. Water is one of the most important things in the world. Every person and every animal must have water to drink frequently, though some animals, like the camel, can get along without it for several days at a time.

Plants and trees also use water in very large quantities. They get it from the earth by means of their roots, which often go down a long way into the ground. If plants cannot get all the water they need, they dry up and wither away. Everybody who has a garden or some house plants must water them frequently.

In some regions where water is not found

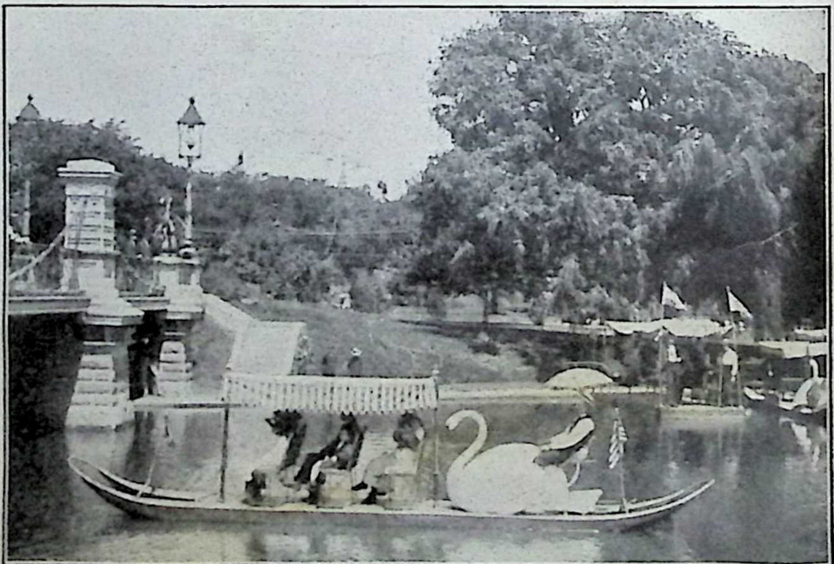

FIG. 32. *A city park with a lake. Parks are the playgrounds and breathing places of large cities.*

near the surface of the ground except in the lowland, grass and trees grow only along the streams, and the upper slopes are bare, and brown or gray, very different from the green fields most people know.

In some parts of the world it is nearly always dry, and the landscape is very similar in color to our hills in a dry season.

Wells and Springs; City Water. In the country we usually get water for drinking and bathing by digging a hole in the ground, to collect the water that is creeping along under the surface. Such a hole for catching water is a *well.*

Sometimes the water flows to the surface on the side or at the foot of a hill, and we have a *spring.* (See Figs. 36 and 37.)

Springs and wells show us that the earth contains a great amount of water that is slowly moving down hill; all of this is rain water that has soaked into the ground.

In cities and large towns the water that people use in their houses is generally brought in pipes from some country lake or stream, perhaps many miles away. The water is not only carried into the houses by means of pipes, but there are watering troughs and drinking fountains on the streets for the horses and dogs and birds and for people as they pass along.

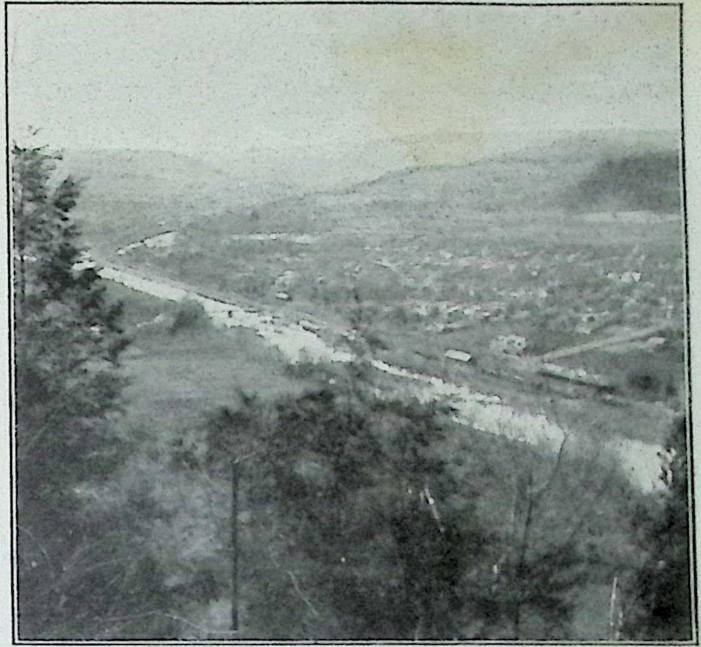

FIG. 34. *A city built in a fertile valley. This illustrates how the lowland is built up first.*

Solid Matter in Water. Not all of the water found in streams is clear and good to drink. The water in many streams is muddy and brown or yellow, especially when it rains often, or very hard. The lack of clearness is due to the small solid particles that are floating along in the water, and which we can easily see if we allow a glass of such muddy water to stand quietly for a few days until it settles. The large amount of matter found on the bottom of the glass shows us that there must be a great quantity of solid material in all the water of a large stream, which is made up of millions of glassfuls of water.

Detritus in Rivers. Every stream is carrying along some solid matter, but in some cases the quantity is so small that the water may seem clear. In swift streams running down steep slopes, the solid matter is usually rolled along the bottom, as sand or pebbles, or even as large boulders. (See Fig. 38.) In such streams we often see that the

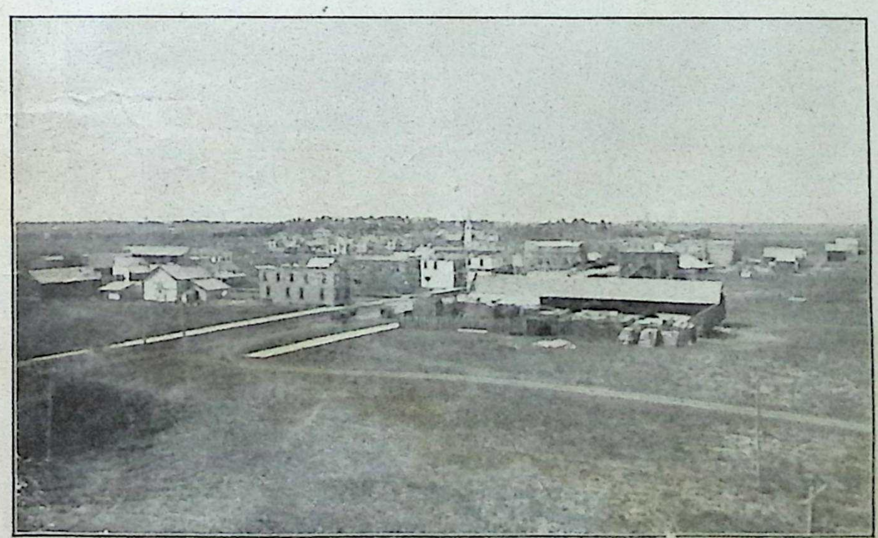

FIG. 33. *A small village on a plain, showing the tendency to build houses about a few streets.*

pebbles or boulders are like the rocks through which the stream flows. This indicates that they have been taken from the land up stream. Streams are carrying something away from the land all the time.

The loosened rock particles, no matter what their size, are called *detritus*. All streams contain some detritus.

We call such streams *rivers*. As there is some detritus in every river, the solid material is an important part of the river, though we should remember, of course, that the water is most important, because it is the water that is doing the work of carrying the detritus.

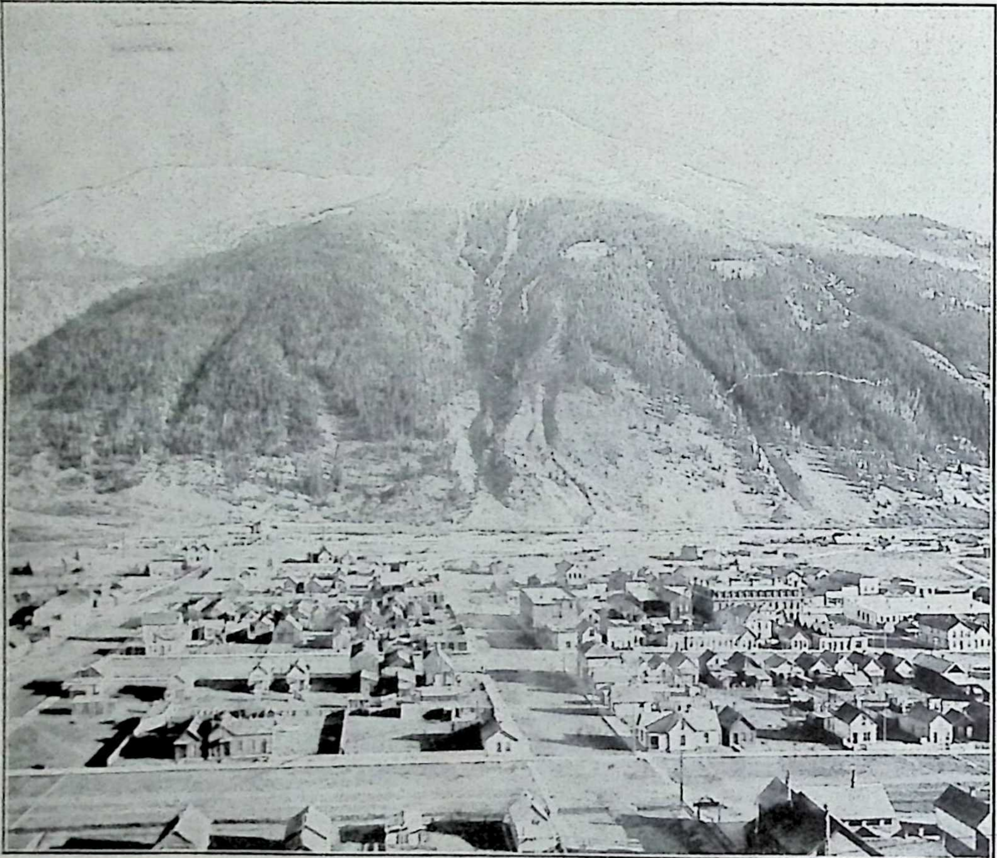
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FIG. 35. *A mountain-side showing the deep ravines and gullies made by streams. The city is built upon the plain made from the detritus.*

A river then is something like a moving railway train that is carrying passengers or freight, for the river is carrying a load or doing work. The more rock materials there are in the river, the greater the load it is carrying and the more it is doing in removing materials from the land.

The Work of a River. One of the great things that a river does then is to *change the shape of the land*, for it is impossible, of course, to remove materials continually from any region and not change its appearance. (See Figs. 35, 38, 41, and 53.)

The best place to see a stream at work and to study the ways it gets its load is in a small *gully* which is being made in a clay bank, or a plowed field, or even in a street gutter after a rainstorm.

In such a gully we can see the water going down the steep slopes and forming a larger stream at the bottom. We can also see the rock particles sliding and tumbling down to the lowest place, where they are seized by the stream and started on their journey down the river. (See Figs. 41 and 55.)

As the materials are removed the

FIG. 36. *A man drinking at a spring in a desert. Notice the absence of grass and trees.*

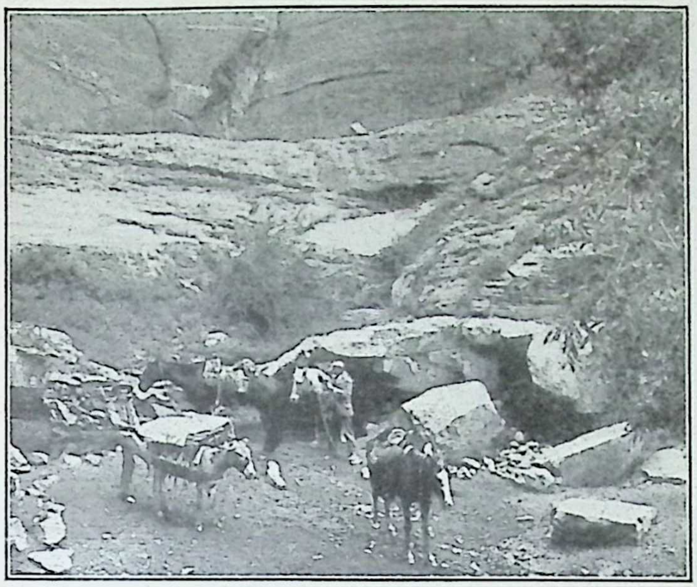

FIG. 37. *A watering-place at the foot of a cliff. The water comes to the surface by a crevice in the rock and forms a spring in a small hollow.*

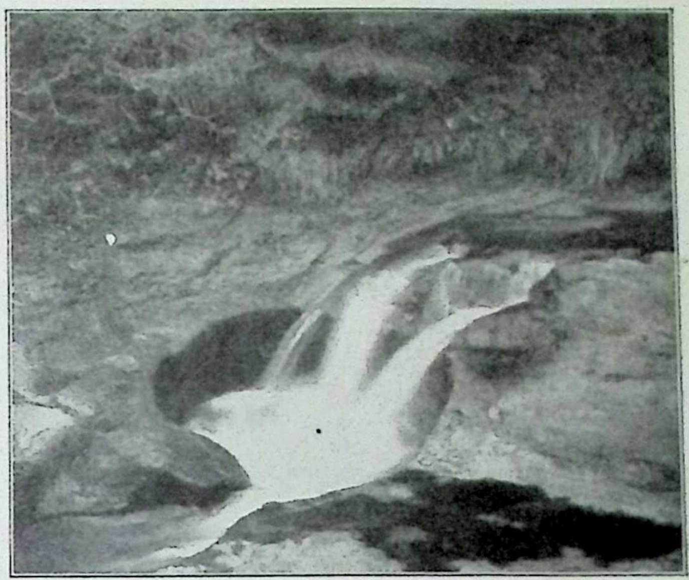

FIG. 38. *A hole made by the action of water. Stones and pebbles caught by the water are rolled round and round, gradually wearing away the rock.*

gully grows wider and perhaps longer, and thus the shape of the land is constantly changed. The work of the little gutter stream is like the work of all the rivers of the world. The present shape of all valleys, whether they are small or large, is due chiefly to the streams working in them.

The heights left in the valleys or between valleys by the running water and not carried away are *hills*, or sometimes mountains.

The hills, the mountains, and the valleys then owe their shape largely to the work of water.

We have seen that valleys contain most of the large *cities*, *towns*, and many of the great *farms* of a country. They are also the best places for *wagon roads* and *railroads*.

A large valley, such as is found in the plateau region of the United States, is like the gully in the clay bank, only *very many times larger and deeper*.

FIG. 39. *A cable line up a steep hill.*

DEFINITIONS

A spring is formed where any quantity of underground water appears at the surface.

A well is an opening dug into the earth, through which the underground water is brought to the surface.

A river is a stream of water carrying detritus and moving through the land.

Suggestions for Review

(1) Watch a stream of water in a street and describe carefully what it does. (2) Find out about some plant that has a long water-seeking root. (3) Pull up a number of weeds and study their roots to see how they are arranged for getting food. (4) Study the roots of the trees in your neighborhood and tell where they get their water. (5) Why is a street sometimes muddy and sometimes dusty? (6) Why are city streets often sprinkled? (7) What vegetables or fruits do you know that are full of water? (8) Where did they get the water? (9) Mention

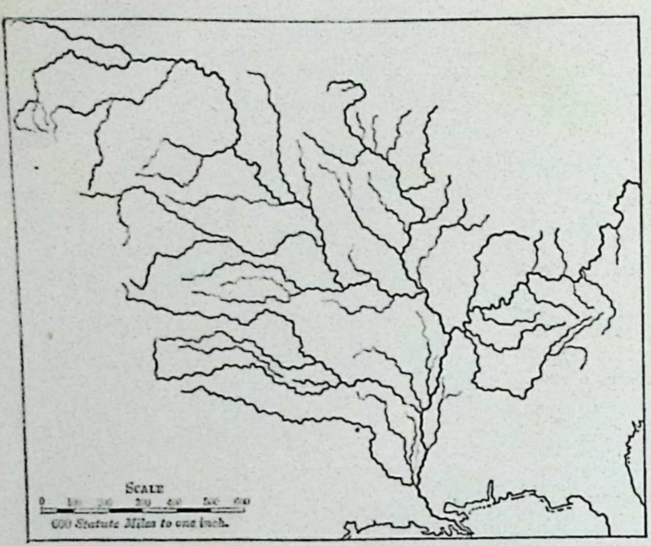

FIG. 40. *Diagram of a river system, showing the many sources, the larger branches, and the large extent of territory drained.*

some uses for springs in a forest. (10) Describe a spring that you have seen. (11) Why do not the people in cities get water from wells? (12) Get a glass of water from a stream and let it settle. (13) What size are the particles left on the bottom of the glass? (14) Find a pebble from a brook or stream and describe its shape. (15) Can you explain the shape? (16) Find some large pebbles that are like the rocks on the hills up stream. (17) Tell the history of such a pebble.

VIII. RIVERS

River Systems and River Basins. The small streams flowing down the steep slopes join others as they flow along and form a larger stream, just as the side tracks in a railway yard are all connected with the track of the main line.

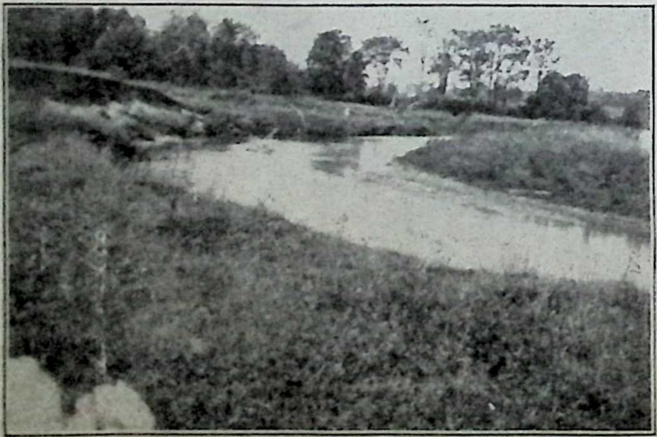

FIG. 41. *A winding stream. The bank at the left has been undercut by the river water and the ma[illegible]l has been carried away.*

The small streams usually run into the large streams very much as the veins in a maple or oak leaf run toward the stem. Thus a river valley usually has a series of branching valleys with ridges separating one valley from the next. (See Fig. 42.)

Each small stream is a *branch* or *tributary* of the large stream. Each tributary is carrying down water and detritus to the *main stream*, and is *making a valley*.

All the small and large streams forming one large river make up a *river system* (see Fig. 40), and all the land which is drained by such a river system is a *river basin*.

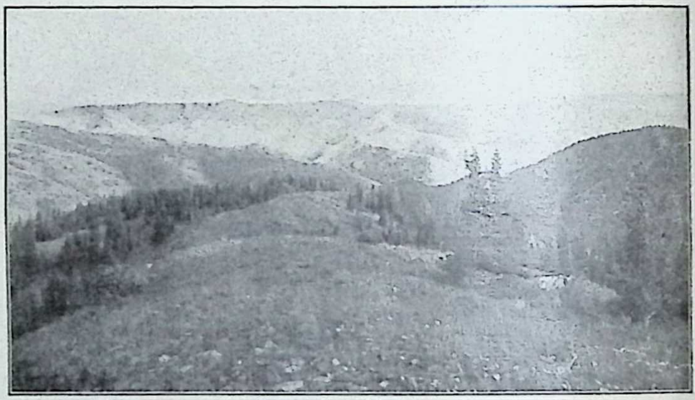

FIG. 42. *A view of a divide, showing how various river valleys are separated.*

Somewhere between one valley and the next, and often on top of the ridge between, is a place from which the land slopes in two directions. The rain falling on such a ridge would flow down the two slopes, part going to one stream and part to another.

This dividing line between one stream and the next is known as a *divide*. The main divides are those which separate one river system from another. In any river basin there are also tributary divides, which are found on the ridges, separating branches of the same river. (See Fig. 42.)

Sometimes a valley contains nothing but a dry stream bed, yet it is a valley, and we know it has been formed, like other valleys,

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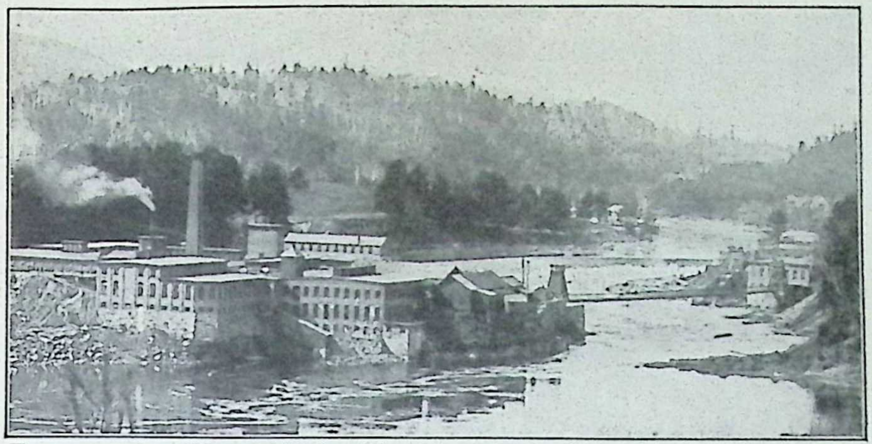

FIG. 43. *A mill supplied with water power by a dam. The picture shows how the level of the water in the river is raised.*

by running water, because it is like other valleys in every respect.

Lakes and Ponds. If we follow down some streams we reach a place where the water becomes very broad, and perhaps deep, and seems to be standing still. Such a broad area of water may have several streams flowing into it, but the water flows out only at the lowest point or *outlet*. We call such a body of water a *lake* if it is large, and a *pond* if it is small.

Lakes are found wherever there is a *dam* or *obstruction* in the river's course that causes the water to rise behind the dam. (See Fig. 46.) The land about the lake forms a dam, and keeps the water from running away until it has accumulated behind the dam and reached the top. Any boy who has made water dams knows how lakes are made, and how quickly they may flow away or be *drained*.

In certain parts of our country great numbers of lakes (see Fig. 44) are found, varying in size from little ponds, just big enough to sail toy boats on, to lakes so large that it takes many hours to cross them on a fast steamboat.

Uses of Lakes. Lakes are very useful. The large ones make travel through the country easy, because one can travel over the level water more easily and quickly than over the rolling land. The edges of a lake where the wind brings cool air ashore make pleasant places for people to live during the summer.

Lakes also furnish water to use in large cities, and they keep water from running away from a region too fast after a storm, because the water has to pass through a small outlet and cannot all go at once.

Lakes rise in height quickly when an unusual amount of water runs into them, and they fall slowly as the water runs away.

Sometimes lakes are made by men by building a dam across a large stream. The water from such a made lake is often used to turn wheels in *mills* (see Figs. 43, 45, and 49), or to supply a city or town with drinking water. (See Fig. 46.) It may also be turned into ditches and carried down over the land, where it waters or *irrigates* the plants, vegetables, and fruit trees. (See Fig. 47.)

Irrigation is very common in those parts of the world where it rains little during the summer, and where the plants and crops would dry up if they were not watered frequently.

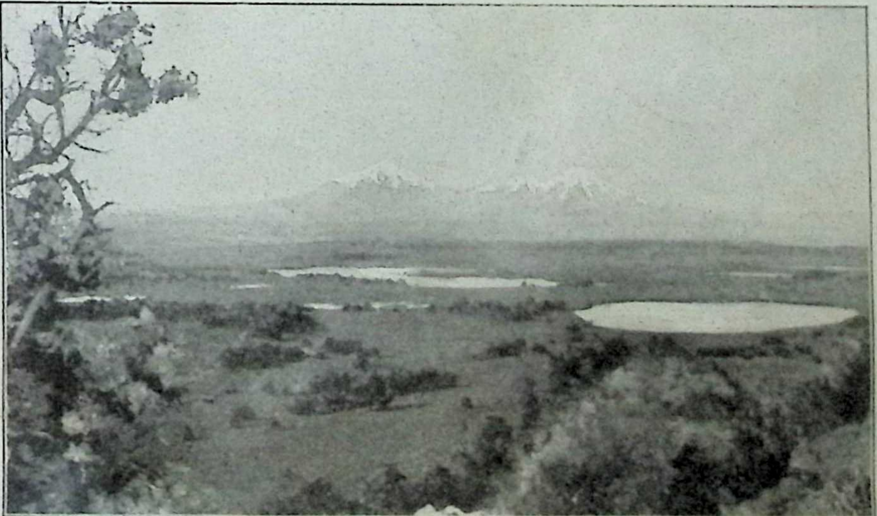

FIG. 44. *A wide plain containing a series of lakes. Notice the snow on the mountains beyond.*

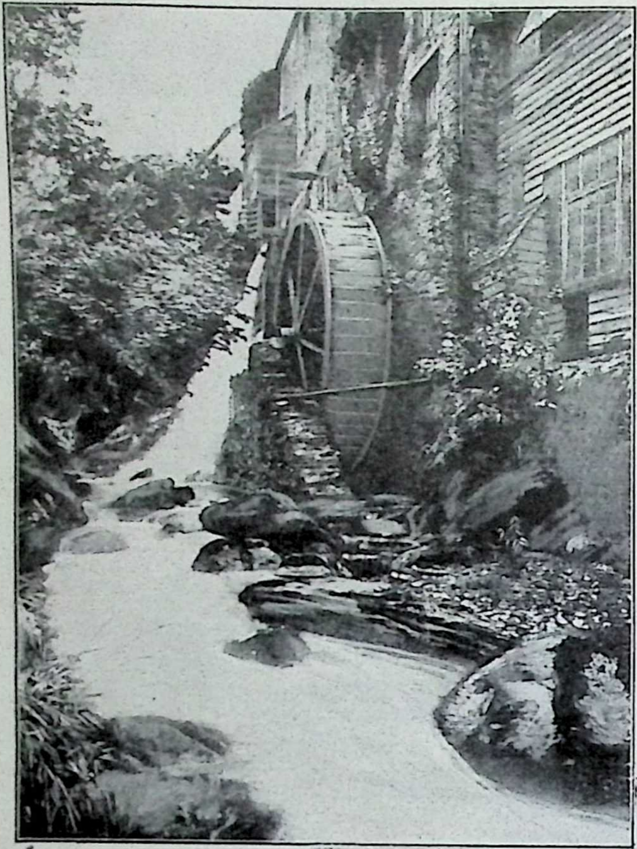

FIG. 45. *An old water wheel at a mill.*

Swamps. Where lakes have become filled with detritus and vegetation, the ground is soft and wet. Such places are known as *swamps*. Swamps often occur also beside streams or along the shores of large bodies of water. Swamps are usually waste land because they are too wet and soft to be used for farming. Where they occur in great numbers, as they do in several parts of the United States, they make cross-country traveling difficult.

Rapids and Waterfalls. At the outlet of a lake the slope of the river bed is usually somewhat steep and the water runs rapidly or tumbles along much like a bouncing ball. Such swift stretches in streams are known as *rapids*. (See Figs. 45 and 48.) If the slope is very steep, the water actually leaps and forms a *waterfall*. The water may leap only a few feet, when we call it a *cascade* (see Fig. 183), or it may fall several hundred feet. Waterfalls are always beautiful, especially where the amount of water is very great, or where the water breaks into spray as it leaps through the air. (See Fig. 213.)

If you build a dam across a brook so as to form a waterfall and make a small wheel which the falling water will turn, it will then be easy to make that wheel turn something else. Such a little water wheel shows us clearly why large water wheels and mills are built at so many large waterfalls.

Small brooks on farms are often made to turn water wheels, and these wheels to turn machines that saw wood, or cut up hay for cattle, or churn milk to make butter, or perform other useful work.

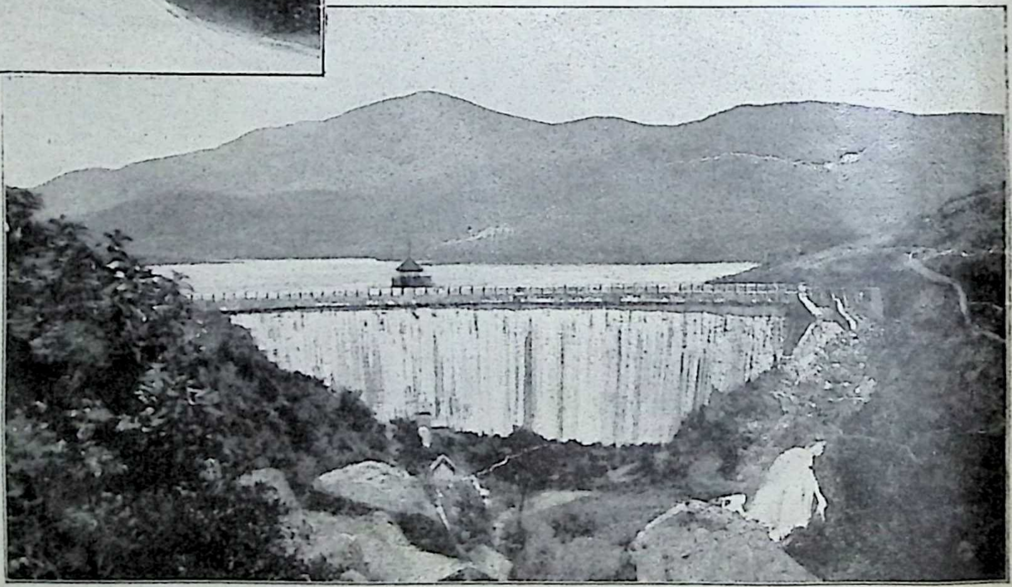

FIG. 46. *A dam built at one end of a valley so as to make a reservoir to supply a distant city with water.*

DEFINITIONS

A tributary or branch is a small stream that pours its water and detritus into a larger stream.

A river system is made up of all the streams that finally join in one main stream.

A river basin includes all the land that is drained by one stream.

A divide is the bordering line between two river basins, from which the land slopes in either direction toward a river.

A lake is a body of water held up-stream by a dam or natural rock barrier.

A rapid is formed by the waters of a river running swiftly along a steep slope.

A waterfall is formed where the water of a stream leaps down a slope that is nearly vertical.

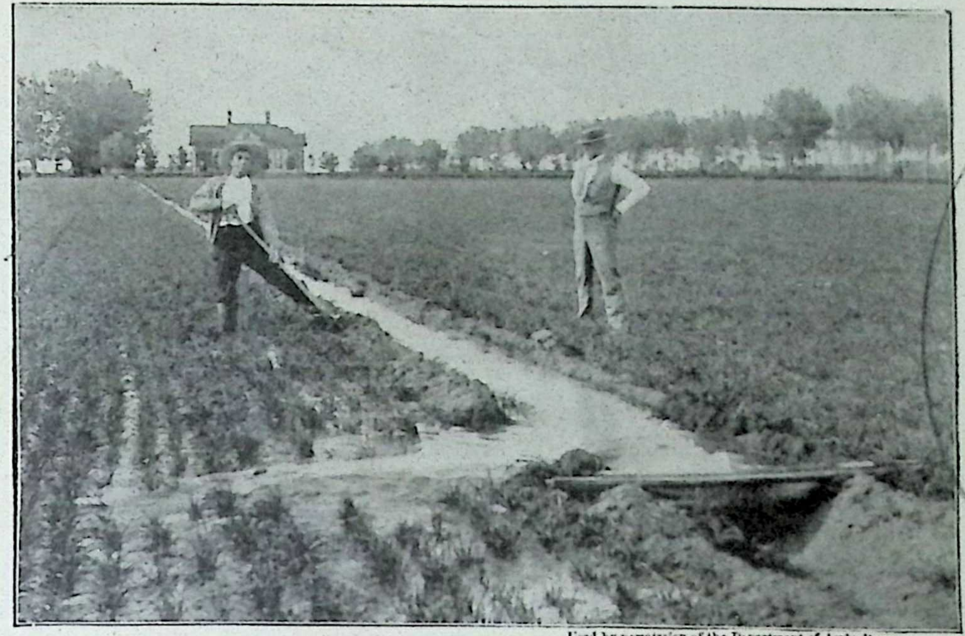

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FIG. 47. *An irrigating ditch in a Colorado wheatfield. Water is turned into the many channels from a large brook or river.*

Suggestions for Review

(1) Describe the arrangement of streams in some river valley you know. (2) Watch the rain running from a house roof, and locate the divide. (3) If two roofs should slope toward each other, where would the rain water go? (4) If you could not tell by your eye which way a street sloped, how could you find out? (5) Suggest some uses of lakes that have not been mentioned. (6) If you lived by a small lake, what would you play in summer? In winter? (7) Can you suggest any other reasons why waterfalls are an advantage to people? (8) Can you mention any famous waterfall? (9) If you were sailing down a stream, what would you have to do when you came to a waterfall? (10) Find out how beavers sometimes build dams across streams. (11) Describe a swamp or swampy place that you have seen. (12) If you ever built a dam, tell how it was made. (13) What is the largest waterfall you have ever seen? (14) For what are waterfalls sometimes used?

IX. RIVERS (*Continued*)

Deltas. If we should go to a mud puddle after it is dried up we should find that it had been partly filled by the detritus brought down by the little river. At the upper end, where the stream entered the puddle, the detritus left by the water would form a flat plain with very steep edges. Such a little plain made of rock materials dropped by water is known as a *delta*. (See Figs. 50 and 51.)

Deltas are usually found wherever a stream flows into a quiet body of water, and so loses the power necessary for carrying its load. The delta may be built even above the surface of the body of water. Then the main stream bringing the detritus would branch as our finger bones branch from our wrists. Each little stream would flow toward a different point on the edge of the delta, and would be carrying a part of the water and detritus of the main stream.

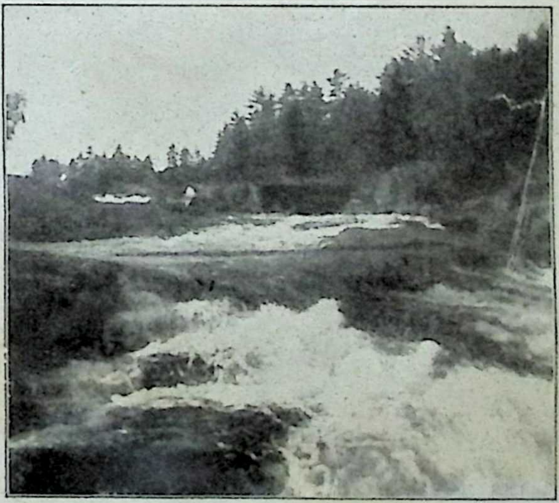

FIG. 48. *Rapids in a swift mountain stream.*

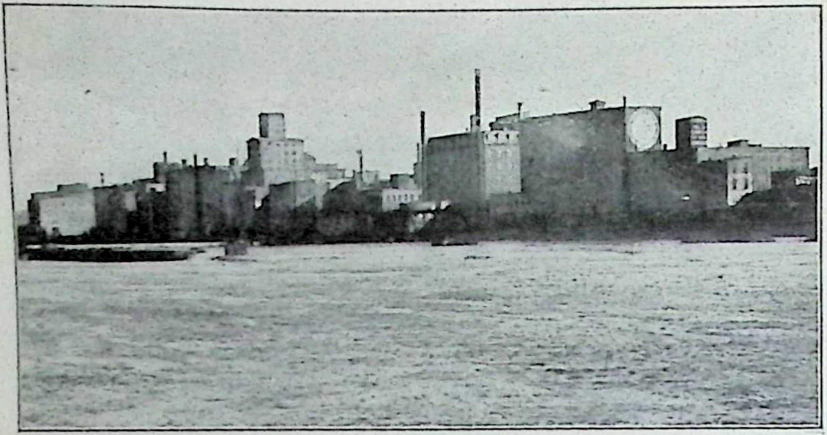

FIG. 49. *A series of mills supplied with water power by a dam, a part of which is to be seen at the left.*

In fact it is because the streams are arranged in this way that we name such a new-made plain a delta. (See Fig. 50.)

If we should follow down to the end of many of the largest rivers of the world we should find them building great deltas at the edge of the largest body of water in the world, known as the ocean. Some of these deltas are large enough for the homes and farms of thousands of people.

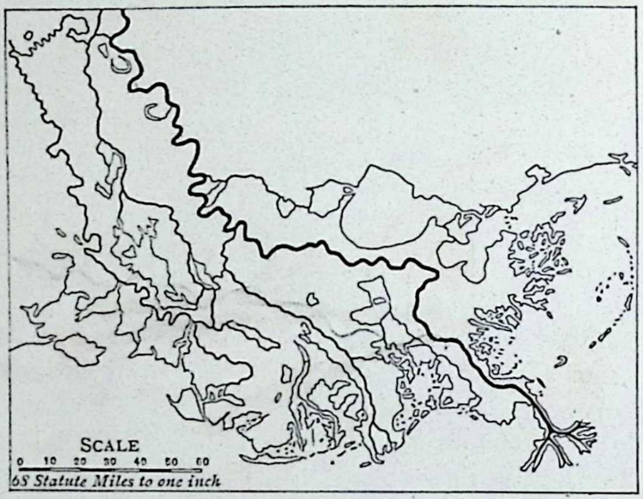

FIG. 50. *Diagram of a delta. Notice how far up the river the distributing outlets begin.*

Uses of Deltas. All rivers run toward the ocean, but not all reach it, because some dry up or disappear on the way. Not all rivers that flow into the ocean make deltas, but where there are deltas the land is gradually extending out into the water as the delta grows.

Deltas are made of the very finest of rock particles, and hence are usually excellent for farms, because the fine rock particles make good soil for plants.

As we shall see later, however, deltas are sometimes found in parts of the world where it is too cold or too dry for farming to be carried on, so all deltas are not equally useful.

Flood and Alluvial Plains. If we go to the lower part of a river valley we shall usually find that the water no longer leaps or hurries along its course, and that the steepest slopes of the valley are far back from the stream. Between the river and the steep slopes will be found a flat, gently sloping plain.

Such a plain is made, like the delta, of fine rock particles that have been brought down by the river or washed from the steeper walls of the valley.

Plains made in this way are known as *alluvial plains.*

Alluvial plains, like the deltas, make excellent farming land, because they are made of very fine soil. A valley in which such a plain is found has been more or less filled up by the gradual building of the alluvial plain, and hence is not as deep as it once

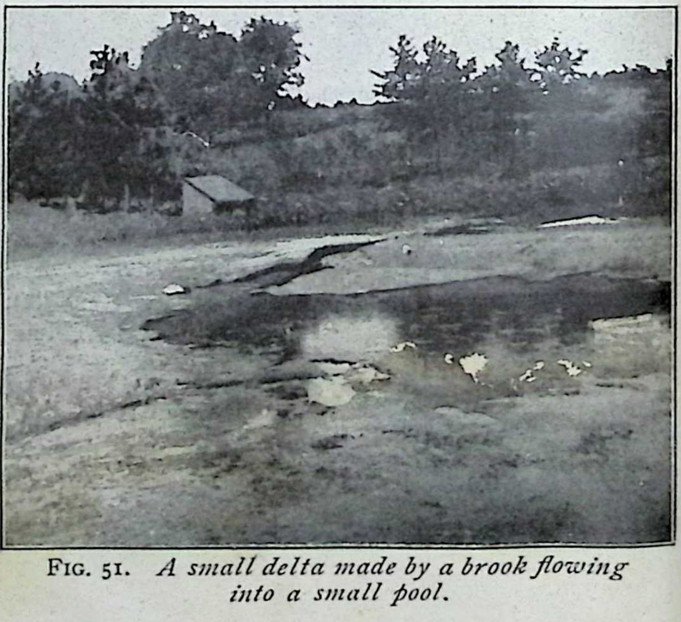

FIG. 51. *A small delta made by a brook flowing into a small pool.*

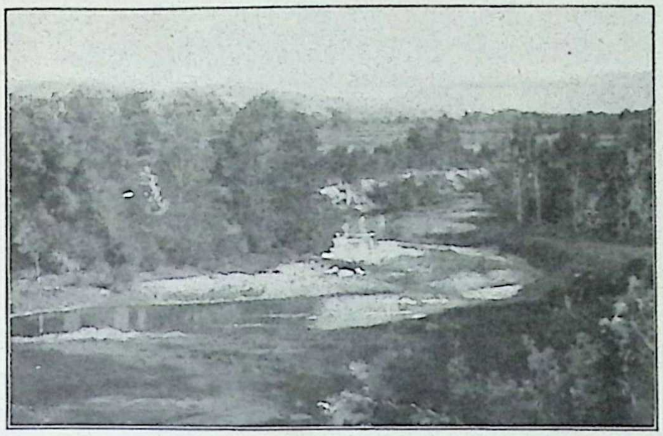

Fig. 52. *A winding river. Notice how the bank has been worn away on the right, and built up on the left, where the water flows more slowly.*

was. (See Figs. 53 and 56.) Some alluvial plains are covered by water after very heavy rains, or in the spring when the streams are flooded with water from the melting snow and heavy spring storms. If the alluvial plain is flooded at such times, it is called a *flood plain*. (See Fig 54.)

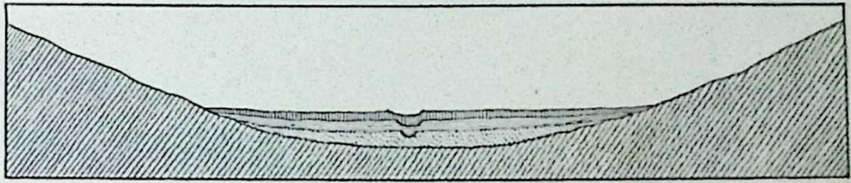

Fig. 53. *A diagram showing the filling in of a river valley by detritus. The river bottom has been gradually built up.*

The Winding of a River. A river flows rapidly while it is near its headwaters where the slopes are steep (see Fig. 55), and where it follows a fairly straight course which it cuts for itself, but through an alluvial plain the river flows very slowly and quietly. The slope is so gentle that the water finds it easier to go around any obstacle than to push it out of the way. (See Fig. 52.) Even a fallen tree will often turn a river to one side.

When a river has once begun to swing it usually grows more and more winding, and a river in an alluvial plain winds and twists about in a snake-like course. (See Fig. 56.)

Traveling by water along such a winding river is very slow, because one has to travel so far between two points that may be close together. In spite, however, of the slowness of traveling, the large rivers of the world, many of which are very crooked, are much used by boats that carry passengers and freight up and down.

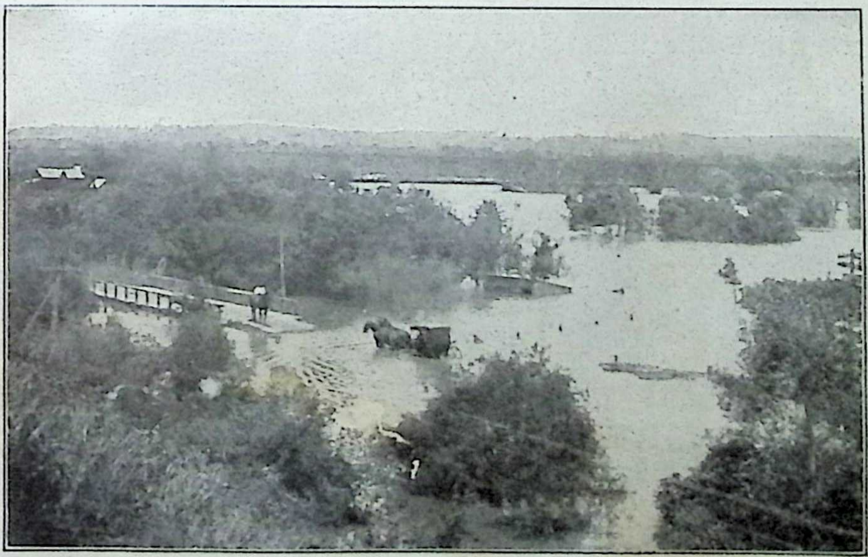

Fig. 54. *A flood. The river has overflowed its banks and covered the lowlands. This flooding deposits mud and sand, thus building up the river valley.*

Summary. We have found that water is useful in many ways. The water that falls to the earth from the sky starts down hill toward the ocean. Some of it runs on the surface of the ground in rivers, making valleys and leaving hills, turning mills, watering farms, and doing many kinds of work as it goes along. Some of it creeps along under the surface, making the earth moist and feeding the plants, and perhaps appearing again at the surface in a spring, and then running on to a river.

We have also seen that river valleys are very important, because they furnish the best places for people to live in; that people can travel more quickly and easily along river valleys than over the mountains and

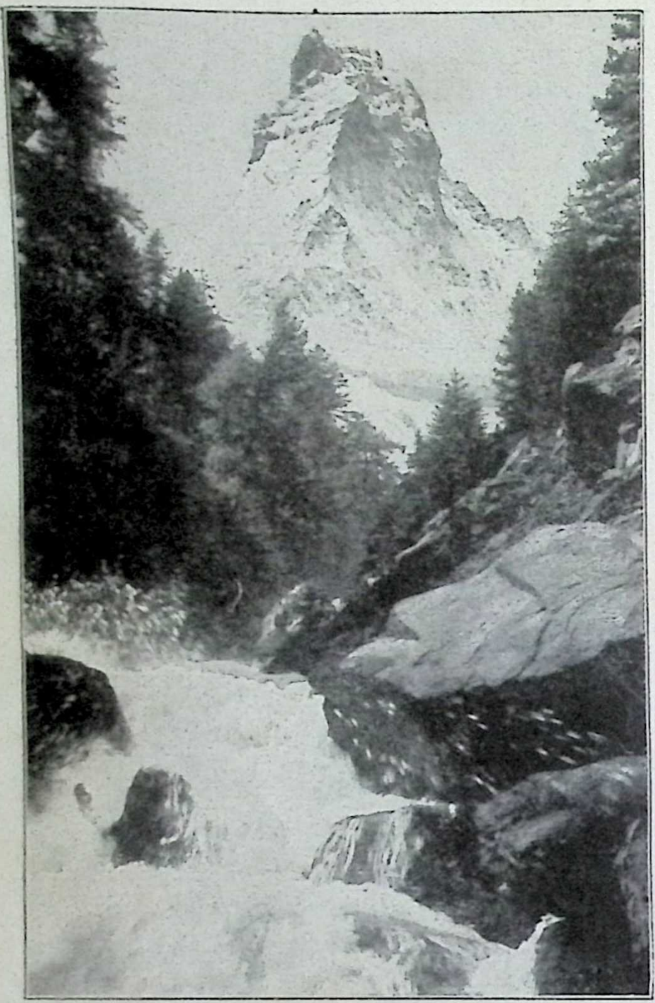

FIG. 55. *A mountain torrent with a steep slope.*

ridges. Rivers are continually changing the shape of their valleys by taking rock materials from some places, by cutting their valleys deeper and broader, and by leaving detritus in other places, making deltas and flood plains. (See Fig. 63.) If we should follow a river from any one of the little headwater tributaries to its end or *mouth* in the ocean, we should always be going down hill, except where there was a lake, held back by a dam, where the water surface would be so nearly level that no one would know there was any slope.

Hence we say that *all water tries to run down hill toward the ocean*, and most rivers reach the ocean, though a few do not.

DEFINITIONS

A delta is a flat plain of fine detritus formed where a river flows into a body of quiet water.

An alluvial plain is a flat plain of fine detritus left by a river along its sides where its slope is gentle.

A flood plain is that portion of an alluvial plain that is covered by the river at times of flood.

Suggestions for Review

(1) Describe a delta that you have seen in a puddle formed during a rain, and if possible watch such a delta grow during a storm. (2) Find out something about a very famous flood plain that is flooded each year. (3) Draw a straight line between two points, and then draw a very curved and winding line between the same points, and compare their lengths. (4) Study a winding stream and find out where the water is deepest and where most shallow. (5) Mention some things that might change the course of a river in an alluvial plain. (6) Write a short story describing the work of an imaginary stream.

X. SOILS

Rock Detritus. We have already spoken of the little rock particles that are being carried along by the river. These particles are

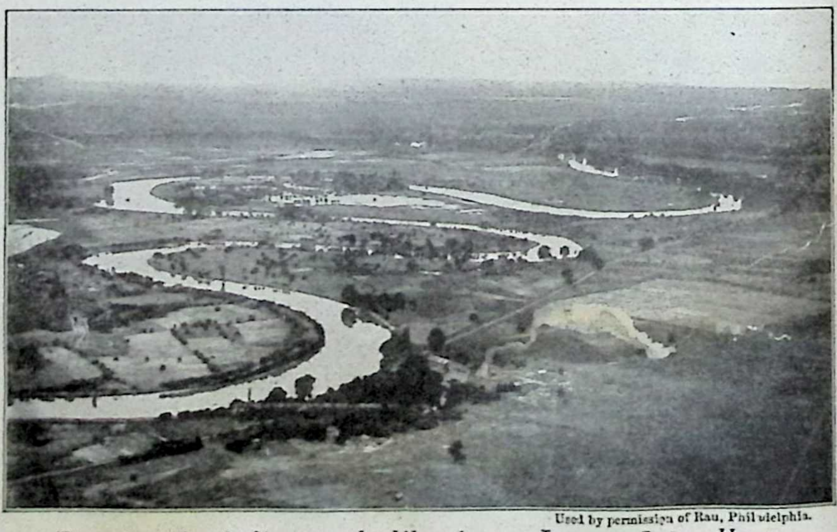

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FIG. 56. *A winding, snake-like river. In very flat valleys rivers flow very slowly. Compare with Fig. 55.*

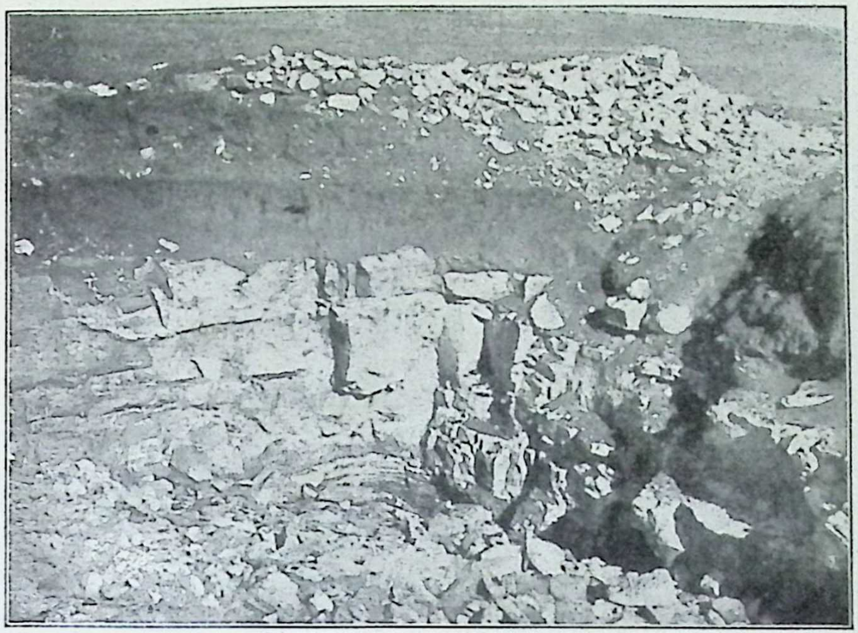

FIG. 57. *A mass of solid rock exposed by digging and blasting, showing the layers of soil above.*

some of the small pieces of loosened rock which may be found covering the surface of the earth almost everywhere, and which have accumulated in some places until they form very deep layers.

Beneath this loose detritus there is always *solid rock*, but it may be many feet under ground. (See Figs. 57 and 58.) If the solid rock can be seen at the surface, we speak of it as a *ledge*. (See Fig. 59.) Large loose pieces of solid rock we call *boulders*. (See Fig. 37.)

Weathering of Rock. The detritus that we see, the particles of which may be so small that we can pick up thousands in one handful, have all been broken off from the solid rock in one way and another.

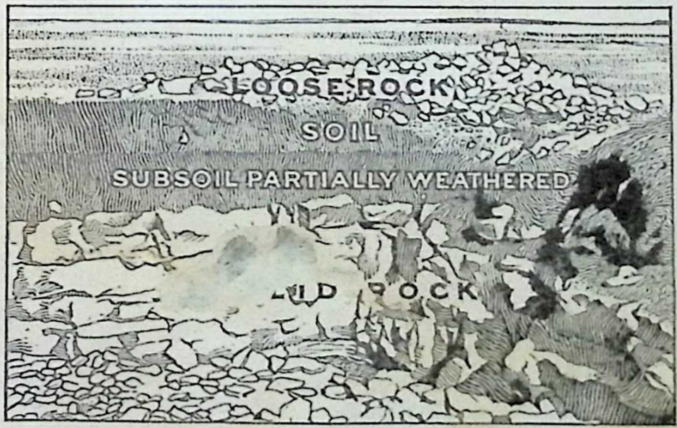

FIG. 58. *A drawing of the soil section shown in Fig. 57, with loose rock, soil, and solid rock sections indicated.*

When a deep hole is dug in the ground we can often see that the particles on top are fine, those just below coarse, and increasing in size until the solid rock is reached. (See Fig. 57.)

Rocks everywhere are broken up and loosened by being exposed to the heat, the cold and the wet of the weather, and we speak of these changes as due to *weathering*. (See Figs. 60, 61, and 62.)

Every one knows how a piece of iron which is left exposed to the weather soon rusts and breaks up into little pieces. Many of us have seen the shingles or boards of a new house turn gray from the weather. Rusting is one kind of weathering, and helps to break up certain kinds of rocks.

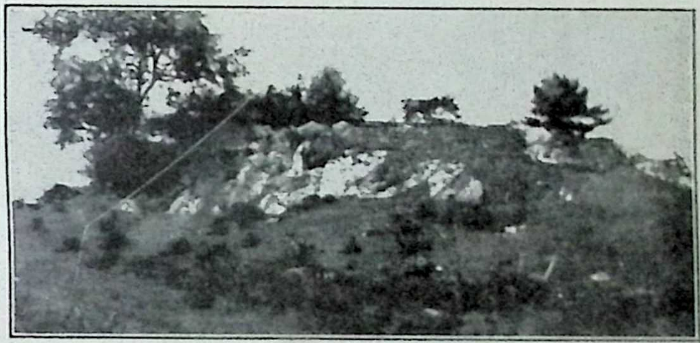

FIG. 59. *A ledge. The loose earth has been removed from the steep slopes, while it remains on the gentle slopes.*

It is rusting and weathering also that color rock particles, so that the surface of the land or the water in the rivers is made yellow or reddish brown.

The freezing of water in cracks in the rocks also breaks the rocks up, just as a water pipe or pitcher is often broken by water freezing in it.

What Soil Is. The upper and finer portions of the loosened rock particles will usually grow plants and make what is known as *soil*. Soil is therefore made mostly from rock, although all good soil contains a certain amount of decayed plant materials. The leaves which decay after they fall from the trees each autumn are mixed with the soil and make it rich.

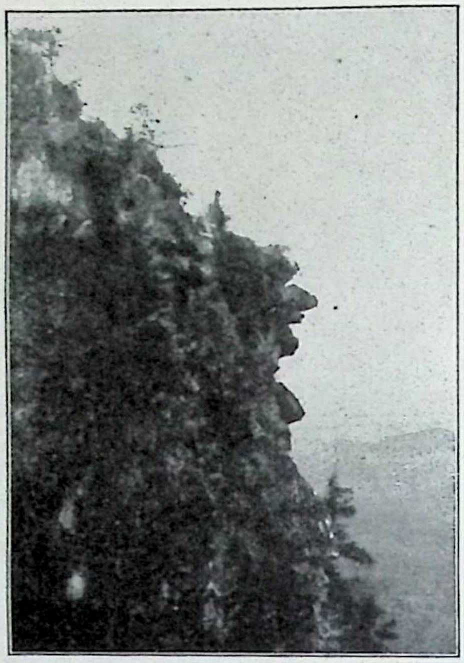

FIG. 60. *A profile on the side of a cliff due to weathering.*

Soil-making is going on all the time, for weathering is constantly taking place everywhere. *Anything that will soften or break up the rocks and make the particles fine is a good soil-maker.*

The worms and other animals that tunnel through the ground are good soil-makers, for the water follows the tunnels through the earth and thus reaches the soil particles more quickly. The farmer plows and harrows to break up the earth and stir the soil so that the water can soak into it. Any one who raises plants in pots in a greenhouse or window-garden is continually helping the soil-making by stirring up the earth to keep it loose and make the plants grow more rapidly.

The Soil on Slopes. Not all of the good soil in the world, however, will raise good crops, because some of the slopes on which the soil rests are so steep that the soil will not stay in place, but slips down as fast as it is formed. (See Fig. 64.) On such slopes the soil is always very thin. (See Fig. 59.)

Even if slopes retain the soil as it is formed, they cannot always be cultivated because people cannot easily get at the place to plow and harrow and till it. Hence the thin soil of steep slopes is generally left for trees or grass. (See Fig. 26.) Where the soil is deep and loose, the running water often cuts deep gullies and wears away a great quantity of material. A smooth slope may be cut up into a series of deep gullies in a few hours during a heavy storm, and a crop planted on such a slope may easily be all washed away.

Where the slopes are very steep they may be bare except for moss such as makes the great loose rocks of the fields in certain parts of our country look gray; or trees may be growing, each little tree getting a footing where it can in a crevice of a rock. (See Fig. 60.)

It is only the gentler slopes that are used for the growing of crops, and we do not find large farms and planted fields on very steep hillsides.

Terraces. In some regions where it is necessary to till the steep slopes they are made into a series of nearly level steps, like stairs, with steep edges. These steps are known as *terraces,* and on the gentler slopes of the tops of the terraces the farmer plants his crops.

The terraces keep the water which falls

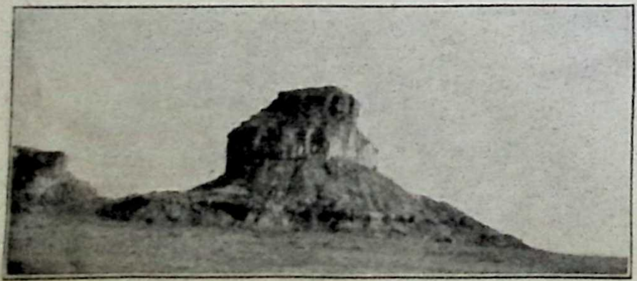

FIG. 61. *A mesa. This is the remnant of a much larger mass of rock now weathered away.*

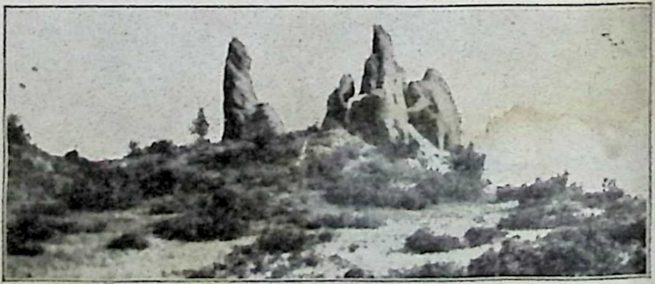

FIG. 62. *Rock "pinnacles" exposed by the weathering of the surrounding earth and rock.*

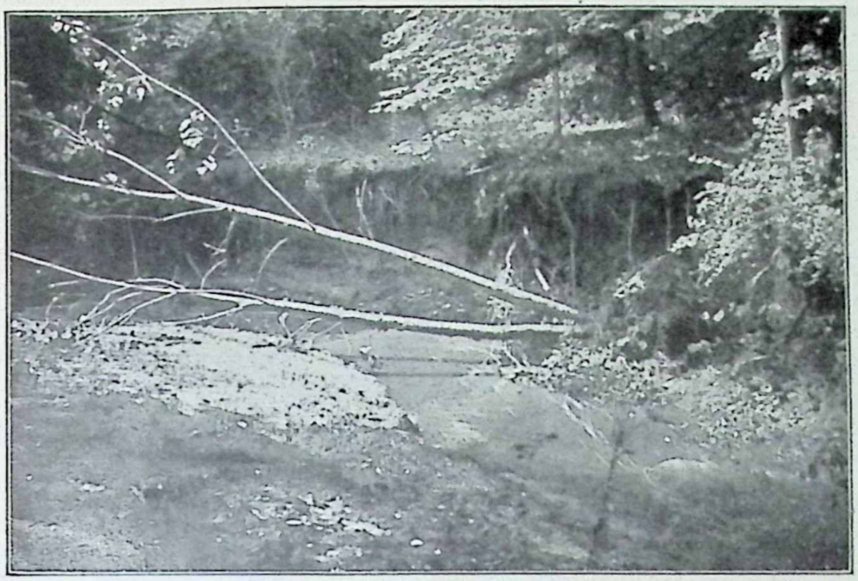

FIG. 63. *A tree washed out by the action of water. When the stream is flooded the rock and soil particles will be carried away.*

in rain from running swiftly down the hill, cutting deep gullies, and thus carrying away the crops after they have been planted, as often happens in fields where the slopes are steep and the soil deep.

Sometimes, also, water is brought along the tops of the terraces from some near-by stream or lake so that the plants are watered and fed during a dry season, or, as we say, the soil is *irrigated*. (See Fig. 185.)

Fertile and Barren Soils. In some parts of the world there are very deep and rich soils, on which, however, practically nothing grows because the land is too cold or the region is too dry.

Those soils that raise good crops we speak of as *fertile*. All others are called *infertile* or *barren*. (See Figs. 65 and 205.)

On almost any farm there are certain fields that have better soils than others. Some kinds of rocks do not decay or weather into as good soil as others, and thus there are in some places great areas that are barren. Any farmer boy knows that a sandy soil is not as fertile as is a dark, rich, loamy soil. He knows, also, that he can raise the best hay and potatoes on a loamy soil, and the best watermelons on a sandy soil.

The Importance of Soils. The soils of the world made from the solid rock beneath are, together with the water and the air, absolutely necessary in order that plants, animals, and men may live, for the soil gives us most of our food.

Those of us who live in large cities, where we can see but very little of the soil or the rocks, may find it hard to believe this. Yet the milk we drink comes from cows that live on grass grown in the soil; the vegetables we eat are raised in the soil, and the meat comes from cattle or sheep or hogs that live on grass grown in the soil. The same may be said for the wheat that is made into flour, the tea, the coffee, the sugar, and most of the other things we have on the table every day.

The clothes we wear also come from the soil — the cotton from the cotton plant grown in the soil, and the wool from sheep

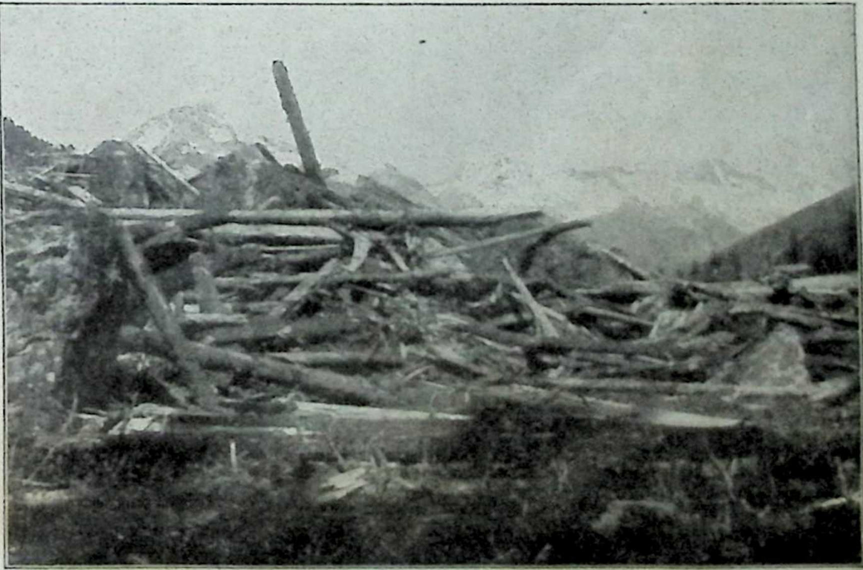

FIG. 64. *The result of a landslide. The slope was so steep that the soil would not cling to it.*

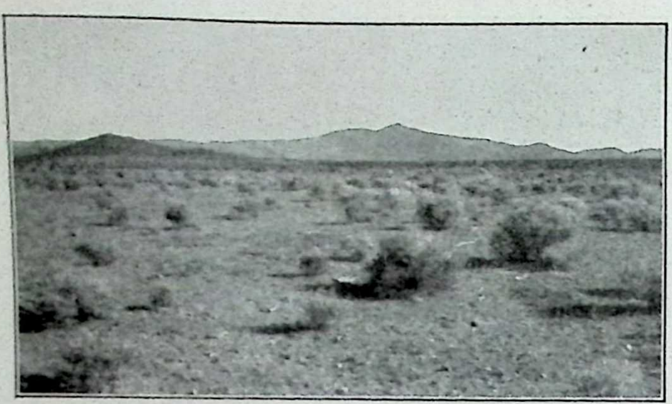

FIG. 65. *A barren area. The soil here is very dry, and only the most hardy shrubs can live.*

which depend on the soil for their food. Even the leather of our shoes comes from the soil because it is made from the skins of animals which depend on grass for food. The farmer's work, therefore, is the most important, because we get from him the materials for our *food* and *clothing.*

DEFINITION

Soil is a mixture of decayed rock and vegetable matter in which plants will grow.

Suggestions for Review

(1) Put a new shingle or board out in the weather for several weeks and describe what changes take place. (2) Put a new iron nail (not a wire nail) in some damp salt and describe what takes place. (3) Why should a farmer put his tools into a building every night? (4) Why is it necessary to keep the iron work on vessels well painted? (5) Mention some animals that stir up the soil. (6) Turn some water on a hard baked soil and on some stirred soil, and see in which case the water disappears the more quickly. (7) Why do farmers frequently plow in the fall? (8) Plant some peas or nasturtiums in a rich, loamy soil and others in sandy soil, and compare the rate of growth. (9) Why do farmers often raise a crop of clover and then plow it into the soil? (10) Why does a farmer hoe and cultivate crops until they are full grown? (11) Where would you go to get soil for a window garden? (12) Break a pebble to see if the inside looks like the outside. (13) Describe and explain any difference you may see.

XI. THE ATMOSPHERE

How We Know There is Air. The atmosphere or air is about us everywhere. We cannot see it, yet we know of its presence because when it is in motion it blows against our faces and moves the trees and grasses.

On a windy dry day the air is full of dust, and if we look at the sunlight streaming into a partly dark room through a small hole, we can see the little specks of dust dancing in the air. In the fall we can see the seeds of many of our common weeds blown along in the air, which must have weight because it bears things up.

If you blow against a sheet of paper it will move because the air has been pushed against it. Hang out a flag and it flaps and snaps as it is hit by the air moving past it.

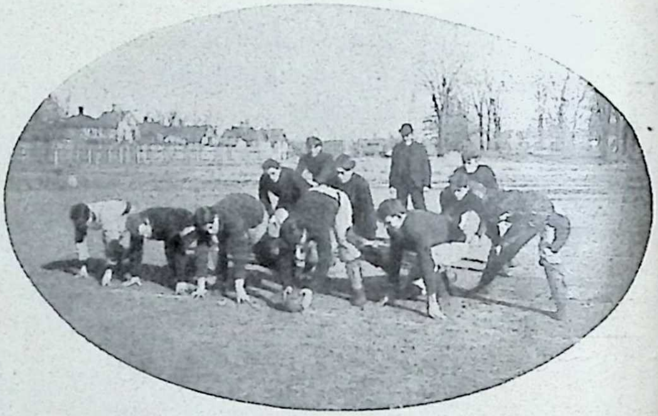

FIG. 66. *Football, the American game, played in the bracing autumn days.*

The Wind and Its Uses. When the air is moving along so that we can feel it on our faces we call it the *wind.* The wind can be used in many more ways than quiet air can. The wind turns windmills (see Fig. 67) to pump water or to run machinery in mills; it blows against a boy's kite and makes it rise in the air.

The wind may even blow so hard that it does much damage, as when it blows down trees and rips shingles and boards off houses. Sometimes it is so strong that a man can hardly walk against it, and it has been known to blow a railroad train off the track.

men's hats.

The wind is of the most importance to the sailor, however, for he depends upon it to blow his vessel along. When the wind stops, as it does sometimes, the sailing vessel is helpless because there is nothing to move it.

Air Necessary to Life. Most of us forget about the air unless it is moving briskly. Yet quiet air is of constant use to us; in fact necessary, because we breathe it. We eat frequently, we have to drink several times a day, but we have to breathe all the time. Even when we are asleep our chests rise and fall with our breathing.

Breathing is nothing but taking air into the part of our bodies known as our lungs and sending it out again. The air purifies our blood as it passes through the lungs, and we could not live if the supply of pure air were shut off for even a few minutes.

Air is *more necessary than food and drink*, for we can go without the latter for many hours at a time.

The Weather. The air can be cold or warm, wet or dry, quiet or moving, and we describe the conditions at any time by describing the *weather*. We can very easily tell whether the air is cold or warm. It is not always easy, however, to describe some of the other features of the weather.

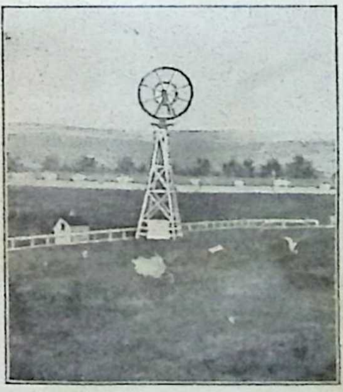
FIG. 67. *A windmill used for pumping water to supply a farm.*

If the weather is cold we try to warm the air of our houses. We usually do this by a stove or furnace that sends its warmth out freely to the neighboring air.

In some parts of our country, houses are warmed by fireplaces, but in the colder regions stoves or furnaces, with steam or hot water pipes, have been found more satisfactory.

Outdoors the air gets heat from the sun. In the daytime, therefore, the air is usually warmer than at night when the sun is not shining.

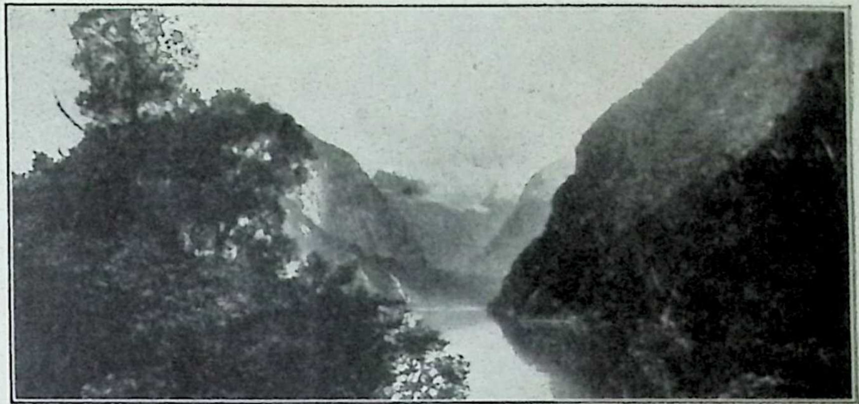
FIG. 68. *Fog forming over a stream. The vapor as it rises from the water is cooled in the air and becomes visible as fog.*

Moisture in the Air. The air gets moist or wet by taking in what we know as *vapor*, which is formed when water is warmed or heated.

Everybody knows that what we call "steam" comes from the mouth of a teakettle when the water in it is boiling. Close to the mouth, however, nothing can be seen, and the steam only appears a little way off. The space between the steam and the kettle is full of vapor which we cannot see.

The steam is vapor that has cooled into little drops in the air. When a railway engine starts from a station we can see the steam and hear its hissing noise. (See Figs. 86 and 94.) If we could look inside the engine where the steam is made it would look as if there were nothing there. It would be full of vapor, however.

Fog and Clouds. Vapor is constantly rising from all damp surfaces and going into the air. Warm air makes water change into vapor, or *evaporate*, faster than cool air. Often on a cool summer night we can see the vapor that has risen and cooled or *condensed* into drops over a lake or swamp. (See Fig. 68.)

In the cooler seasons the moisture in the

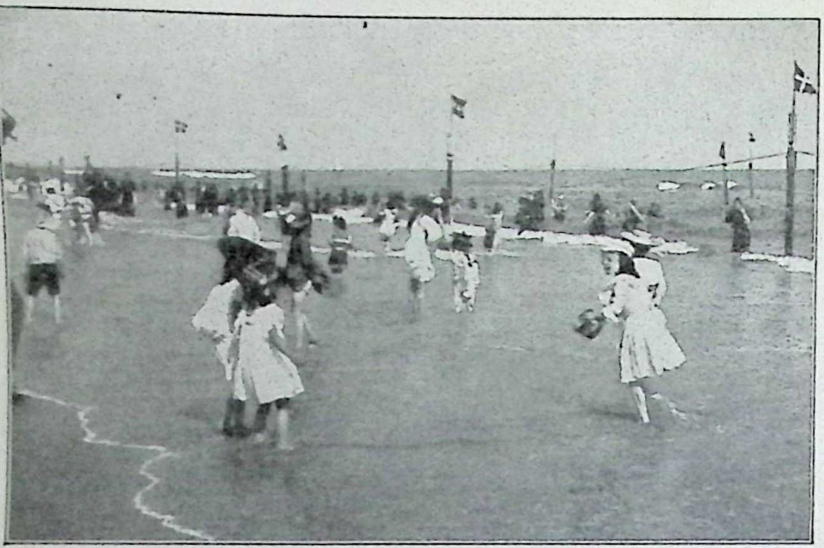

FIG. 69. *A typical scene on an ocean beach in the summer time.*

air is often frozen into small crystals of ice, known as *frost.* In the summer the moisture which is evaporated from the ground is often chilled by the night air and condensed into small drops of water known as *dew.* It is the dew that makes the grass wet on summer mornings.

Fog and clouds are only chilled water vapor floating in the air. Sometimes the clouds get so heavy and dark with moisture that the moisture has to fall. Then we have *rain* or, if it is very cold, *snow.*

What Becomes of the Rain. The water which is evaporated from the lakes and the ocean is carried along in the air by the wind and finally falls again. Some of it falls into the ocean, some of it falls on the land and helps keep the rivers and lakes full, and feeds the plants as it creeps along underground.

We have already seen that the running water on the land is always moving down toward the sea. Thus, much of the water finally gets back to the ocean, from which the larger part of it was taken by evaporation.

Kinds of Weather. We call our weather *fair* or *clear* if the moisture in the air does not hide the sun, *cloudy* if the sun is clouded over, and *stormy* if it rains or snows.

Most clouds are very close to the surface of the earth, and above the clouds the sky is clear and the sun or stars are shining. Sometimes one can climb a mountain and be in clear weather with the clouds all below him.

Our pleasantest fair weather comes in the fall, or autumn, or in the early summer. We then have many warm, comfortable days with perhaps a little wind, and with a beautiful, clear blue sky. Such days make one feel full of life and ready to do anything. These are the days for long walks through the woods to gather wild flowers or nuts, and for football. (See Fig. 66.) They are what we call *bracing* days because they make us feel so full of energy.

Summer Fair Weather. In the summer our fair weather is usually hot or warm, and the sky is not so clear as it is on fair days in the fall. In fact it is often thick and hazy, and looks bluish as if it were full of smoke. In summer there is frequently no wind at all, and the weather makes us feel very uncomfortable.

If the day is very moist, but yet not moist enough to rain, we do not feel like working very hard. Everything feels damp, and postage stamps get sticky. Our clothes cling

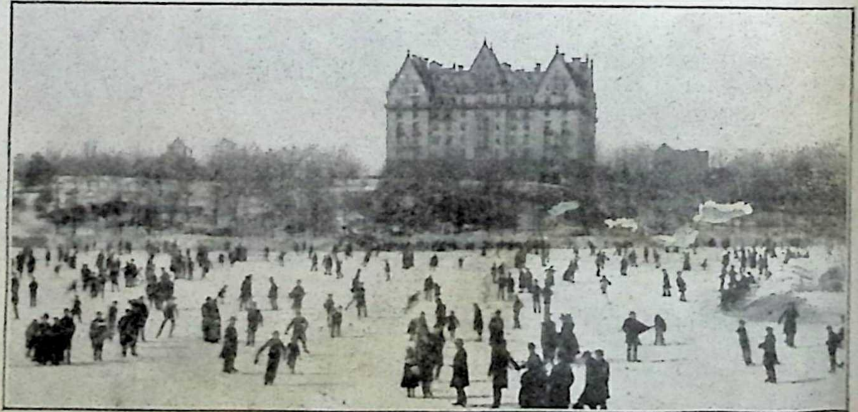

FIG. 70. *Skating on one of the lakes in a large city park.*

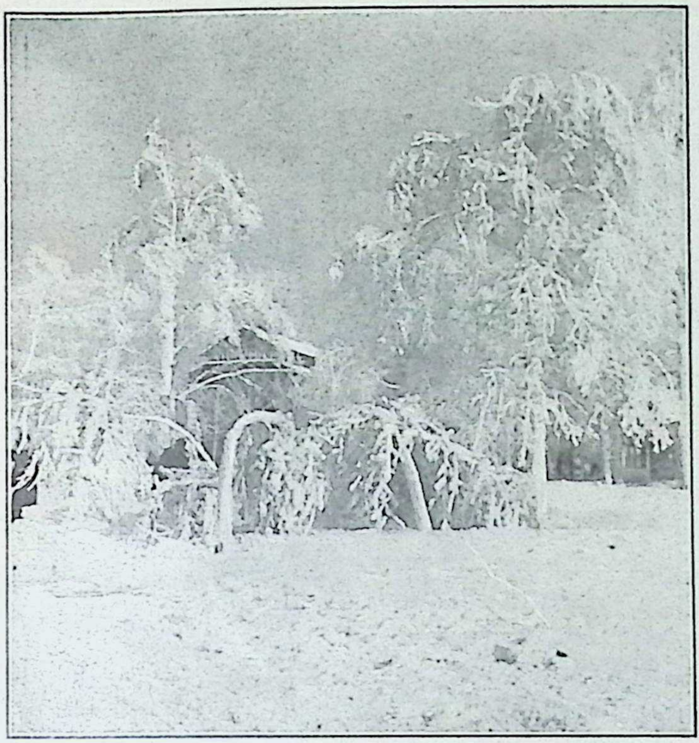

Fig. 71. *Trees weighted down after a heavy snowstorm.*

to us and we try to find some way of getting cool. These are the days to go in swimming. (See Fig. 69.)

Very hot, moist days are the most uncomfortable days we have, and they often cause much discomfort and sickness. People get overheated, animals become quiet, cows and sheep lie down in the shade in the pastures instead of eating (see Fig. 76), and plants wilt and dry up so that the harvest is poor.

The other kind of fair weather which we have in summer is when it is very hot and dry with no wind and no sign of rain. Such weather is very bad for all crops, because they cannot get water enough to keep them alive. That portion of our country in which the largest number of people live has very little such weather.

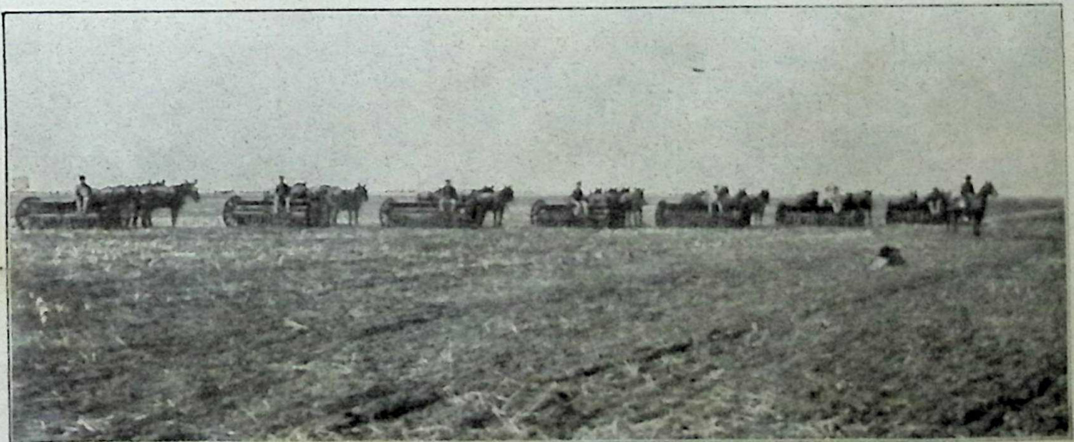

Fig. 72. *A planting scene on a large farm on the western prairies. Hundreds of men are often employed on a single farm during the planting and harvesting seasons.*

Winter Fair Weather. In the winter our fair weather is as different as it can be from that of the summer. In the northern part of our country it is usually cold, and the sky is beautifully clear, especially at night, when the stars are so bright that the night is light without a moon. If there is a wind, it is often very strong and blows the cold into the houses, so that it is hard to keep warm. Sheep and cattle that are not under cover huddle together in the sunshine in some sheltered place.

In a large part of the United States we have many such days in the winter, and if there are several together we say it is a *cold snap*.

On the coldest and fairest days of the winter there is often no wind. The air is quiet and we have a *calm*. These are the days when the ice on the ponds and rivers as well as the ground cracks because it is so cold, just as a piece of iron may break as it shrinks in size when it gets cold. It is on such days in the northern part of the United States that the skating is usually the best, unless the ice is covered too deeply with snow. (See Fig. 70.)

Definitions

Wind is air moving horizontally.

Weather is the condition of the air in a place at any moment.

Vapor is invisible moisture in the air.

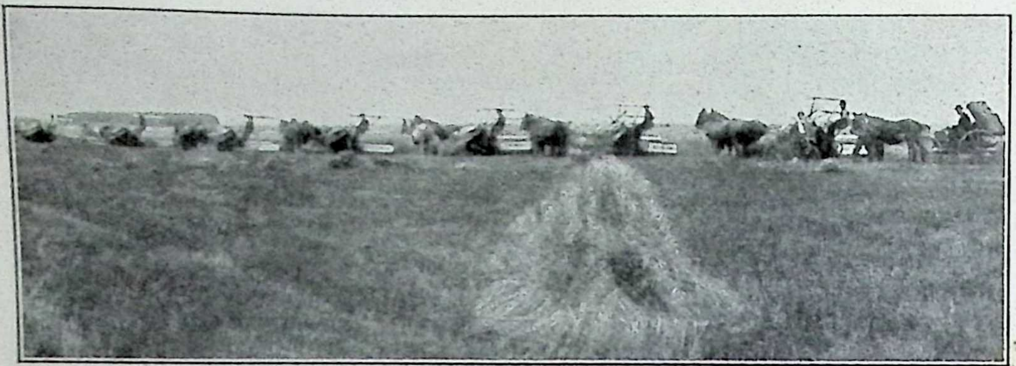

FIG. 73. *Reaping and binding the grain by machinery on a large western farm. Each reaper does the work of five men in one-half the time.*

Suggestions for Review

(1) Find out some uses of the wind that have not been mentioned. (2) Describe some cases where the wind has been harmful. (3) Open a window in a warm room and describe what happens to the air. (4) Describe the weather today. (5) What happens when wet clothes are hung in the air to dry? (6) Why is it that clothes sometimes will not dry, though it is not raining? (7) On what kind of a day do clothes dry best? (8) Wet your hand and blow on it. What happens? (9) What does this tell you about the danger of wearing wet clothes on a cold day? (10) Why is there moisture on the windows of a laundry on a cold day? (11) What do we mean when we say we can see the horses' breath? (12) What season of the year do you like best, and why? (13) Mention all the ways you can by which you keep warm in winter. (14) Watch the smoke from a chimney on a calm winter day and tell how it rises. (15) How can you tell that there is moisture in the air even when it is not raining?

XII. THE ATMOSPHERE

(*Continued*)

Spring Storms. We shall find that there are many kinds of stormy weather during a year, just as we have seen that there are many kinds of fair weather.

In the spring we often have a great deal of cloudy weather, and many rains lasting two or three days. Sometimes it rains gently without much wind, and then the country boy know [illegible] is good weather to go a-fishing. If the wind blows, as it often does, the storm may be very severe. Then no one goes out of doors if he can help it.

Such rains come in the early spring when the grass and trees and flowers are beginning to grow. The rain is then very helpful because it makes the plants grow.

There are many days in the spring when we get several short, heavy rains in one day, and we say it is a day of *showers.* On such days it looks as if it would be fair every minute, and yet it is best to carry an umbrella.

Summer Storms. In the summer we usually have few long storms. We have many heavy rains, perhaps with thunder and lightning and much wind. These storms often give us a great deal of rainfall in a short time, so that the streets and gutters are full of water, and crops are washed out on the hillsides. Grain and grass and other crops are frequently beaten flat and greatly damaged. Sometimes during storms some of the water falls as solid pieces of ice, or *hailstones.* These hailstones do a great deal of damage, as they make holes in the leaves

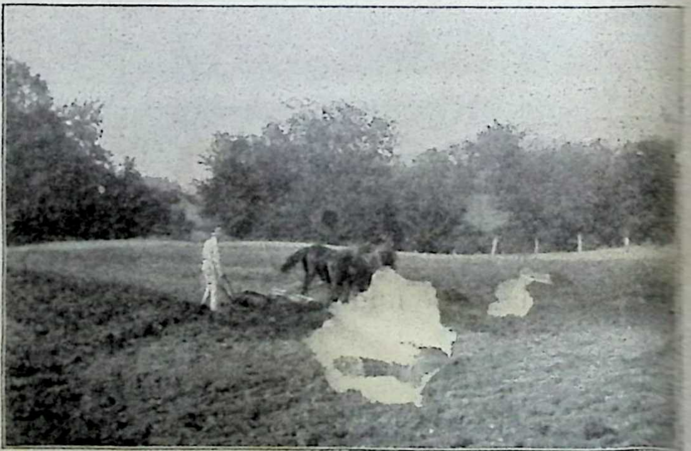

FIG. 74. *Plowing on a small farm. In a rolling or hilly country the work cannot be done by big machines as it can be on a plain.*

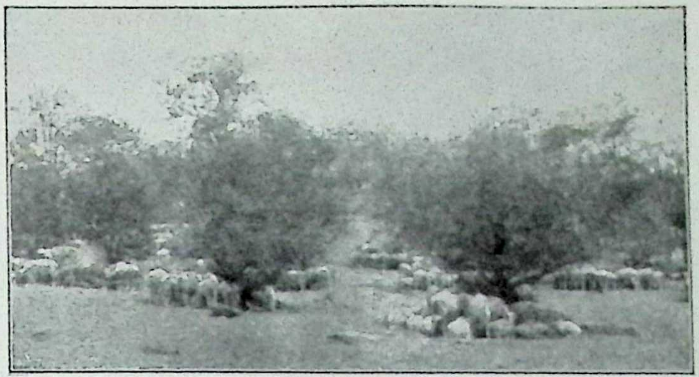

Fig. 76. *Sheep grazing. In the picture the flocks are seeking shelter from the sun beneath the trees.*

of the plants and sometimes cut the vegetation all to pieces.

Ice Storms. In the fall and in the winter, in the northern part of the United States, when it is too warm to snow, we often have heavy rainstorms that are very cold. The wind may blow hard and the water may freeze as it falls, so that the trees and the telephone poles, the streets and the sidewalks are covered with a thin layer of ice. Then men and horses find it hard to walk because it is so slippery.

The little birds which stay in the north during the winter can scarcely get any food because the seeds are all covered with ice. Telegraph and telephone wires break down from the weight of ice, causing a great deal of trouble. But if it suddenly clears away, everything looks very beautiful, shining in the bright sunlight.

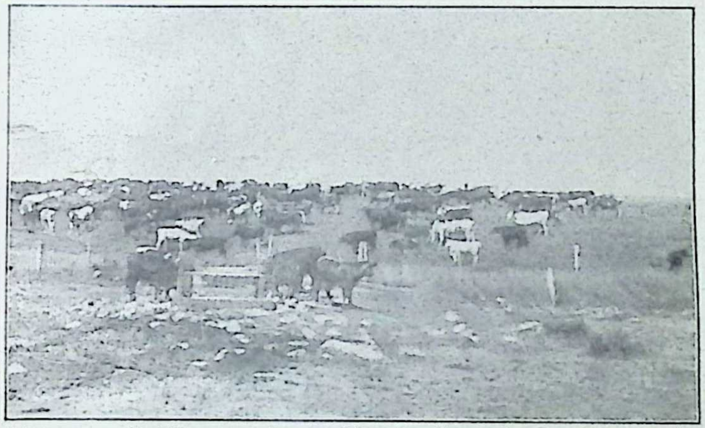

Fig. 75. *Cattle grazing. Herds of cattle roam over the plains until they are large enough for market.*

Snowstorms. Snowstorms come in the winter, and are most frequent and severe in the northern part of the United States. If the air is quiet and it is not too cold, the snow comes floating down in large feathery flakes that are very pretty. If we look closely at any flake w[illegible] it is made up of many different pa[illegible]re very beautiful in shape, and wh[illegible] call crystals. If we catch some [illegible] the snow on a piece of black cloth we can easily see the different shapes of the crystals.

This moist snow that falls in large flakes comes down so evenly that everything is covered with a layer of snow (See Fig. 71.) Even the telephone and telegraph wires may have a covering as thick as two fingers. Such snow makes fine coasting and fine sleighing. If it rains a little and then freezes at the end of the snowstorm, the snow becomes covered with a crust, which makes the best coasting.

Snowshoes, such as are used in the deep snows of the coldest parts of the United States, go more easily on soft snow.

The unpleasant snowstorms are those which come when it is very cold and windy. Then the snow particles are very small, like specks of dust. They make the air so thick that one cannot see far, and they cut the face like needle points.

Such snow usually blows about easily, and gets blown away from the windy or *windward* side of an object, and piled upon the other or *leeward* side, making great snowdrifts which may be many feet deep. Some roads may be filled full from fence to fence with snow, while other roads along which the wind can blow are swept bare. Then the sleighing is very bad because one cannot go far without striking bare ground.

Such storms of fine snow often cover railroad tracks so that the strongest engine cannot get through. In some parts of the United States trains are often snowed in for days, until another train comes up with a strong snow-plow that makes a hole in the drifts and clears [illegible] tracks.

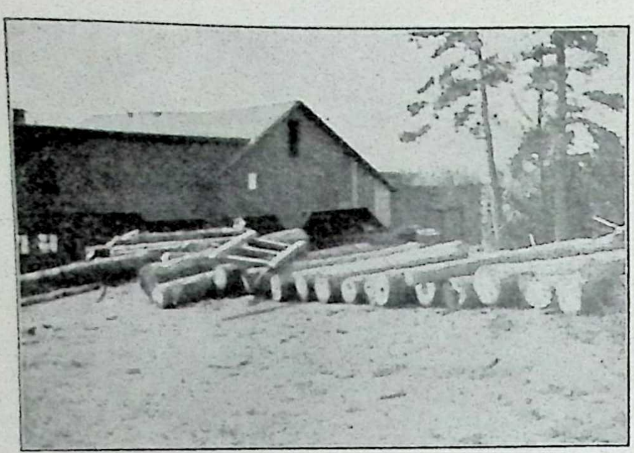

FIG. 77. *Logs ready to be sawed into lumber. They are brought to the mill by teams or floated down a river.*

Summary. We have learned that the land, the water, and the air are all important, for in one way or another they make it possible for animals, plants, and men to live.

If the weather changes, we must often alter our plans for a day or two, or put on other clothes, or change the amount of heat needed to keep us warm in our houses. People thus, as a rule, think more about the atmosphere than they do about the land or the water, because the weather changes so frequently and often so suddenly.

We know that we ourselves need food, clothing, and shelter from the weather in order to live. We are now going to see some of the ways in which other people help us to secure some of the necessary things which we cannot get readily for ourselves.

Suggestions for Review

(1) Why is it often dangerous to sit on the ground in the spring or fall? (2) What kind of days do you like in winter, and why? (3) Why do farmers like to have their barnyards on the south side of the barn? (4) Which side of a board or stone fence would be warmer in the winter? (5) Why do evergreen trees often get bent over with snow in the winter while other trees do not? (6) Why are street railroads not always able to run cars in the winter? (7) On what kinds of days do you feed birds? (8) Describe some hailstorm you have seen. (9) From whom did the white men learn to use snowshoes? (10) Draw the shapes of some snowflakes. (11) Describe what happens to the snow when you make it into a snowball. (12) On what kind of a day can you best make snow men? (13) Find out about snow sheds built by some railroads. (14) Why is the snow always cleaned up and carted away in some cities? (15) Find out how snow protects the plants.

XIII. OUR NEIGHBORS AND OURSELVES

What Our Neighbors Do for Us. We have already seen that most people live in groups of houses in villages, towns, or cities, and that each house usually contains a family. We speak of the people in the houses near us, whether we know them or not, as our *neighbors*.

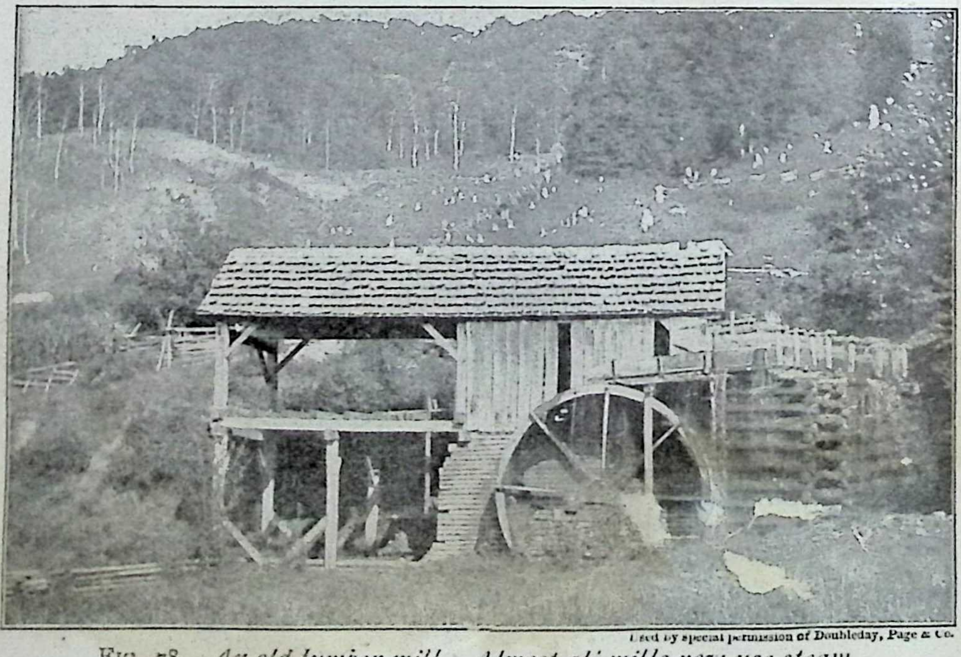

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FIG. 78. *An old lumber mill. Almost all mills now use steam instead of water for power.*

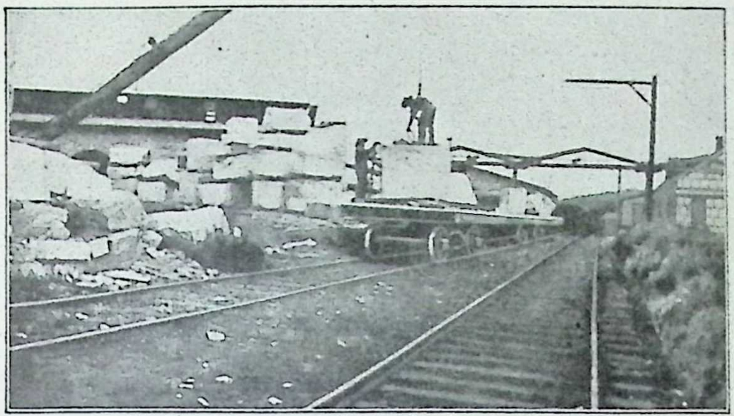

FIG. 79. *Unloading stone brought from a quarry, where it was cut into blocks, placed on flat cars, and shipped to its destination.*

Few of us realize, however, how much we depend on people outside our homes, that is, upon our neighbors, for many of the things we need every day. If we stop to think of what we have on the breakfast table, especially those of us who live in large towns or cities, we shall see that we could not live alone, for we could not get our food and clothing by our own work.

A long while ago, when nearly every one lived on small farms, it was possible for a family to procure their food and the wool for their clothing from their own land. The women spun the wool into cloth and smoked the meat so that it would keep, and manufacturing as well as agriculture was carried on upon the farm.

In some parts of the United States people still do all these things for themselves, but as a rule the bread, butter, coffee, milk, sugar, oatmeal or other cereal, and the meat — indeed all the food on our table — is brought from a longer or shorter distance. In large towns or cities people go to the store and buy some things, while others, like milk (see Figs. 221, 229, 280, and 299) or bread, are brought regularly to their doors and paid for with money. The bread is made from flour, either at home or in a bakery; the flour was ground from wheat at the mill, and the wheat was raised on a farm somewhere.

The same thing is true of the other articles of food people have daily. Some of them came from a long distance and some were raised by our neighbors. If we live on a farm we can raise many things ourselves, but at least the coffee (see Fig. 237) comes from a long distance, because it will not grow in the United States.

Occupations of Men. If we should go where any one article of food is raised in large quantities, we should find many people devoting their whole time to this one business. In some parts of the country people raise mostly wheat on their farms; in others corn, or cotton, or rice; in other regions cattle or some other important products that can be used for food.

Thus there are many kinds of work, many *occupations*, all of which may be important to us because we use the products every day.

Agriculture; Grazing. The raising of plants from which we get food, materials for clothing, or other useful products, we

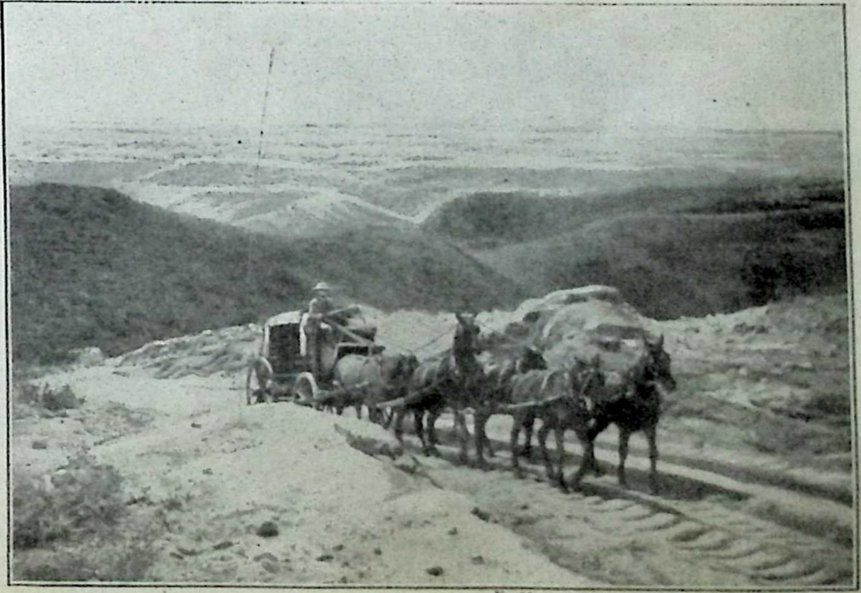

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FIG. 80. *Transportation by stagecoach. In many hilly and mountainous regions the stagecoach has to be used. Notice the ridges which aid the horses in getting a firm footing.*

call *agriculture*. (See Figs. 72, 73, and 74.) Agriculture is the principal occupation of farmers. Most of the food we eat is raised on large farms, but the little gardens in yards or on vacant city lots are small farms, and are good examples of agriculture.

In some parts of the United States people raise cattle for their flesh, or for their milk, some of which is made into butter and cheese, or for their skins, which are made into leather. They also raise horses for use in hauling loads, and sheep for their flesh, or for the wool on their backs which can be made into cloth and clothing. This occupation is known as *grazing*. (See Figs. 75 and 76.)

One region is better for agriculture and another for grazing, and one farming region may be adapted to raising wheat, while another produces cotton, hay, or potatoes more successfully. We shall see the reasons for this when we study carefully the different parts of the United States. (See Fig. 124.)

Lumbering; Quarrying; Mining. The wood for our furniture and houses, and for the manufacture of paper, comes from the forests where *lumbering* or the cutting of trees is the chief occupation. (See Figs. 77 and 78.)

The rocks that are sometimes built into houses or used for paving stones in the streets are taken from the ground. *Quarrying* is the name given to this kind of work. (See Fig. 79.)

Other things besides rocks are secured from the ground, as the *gold, silver*, and *copper* which we use for money, the *iron* from which we make our knives, nails useful in building, lamp-posts for the street, and tools for the farm. *Coal*, which we burn to get heat, is also dug from the ground. All these different kinds of work are forms of *mining*, which is an important occupation.

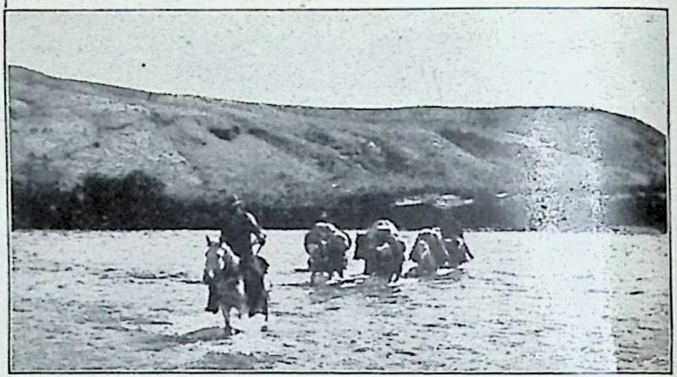
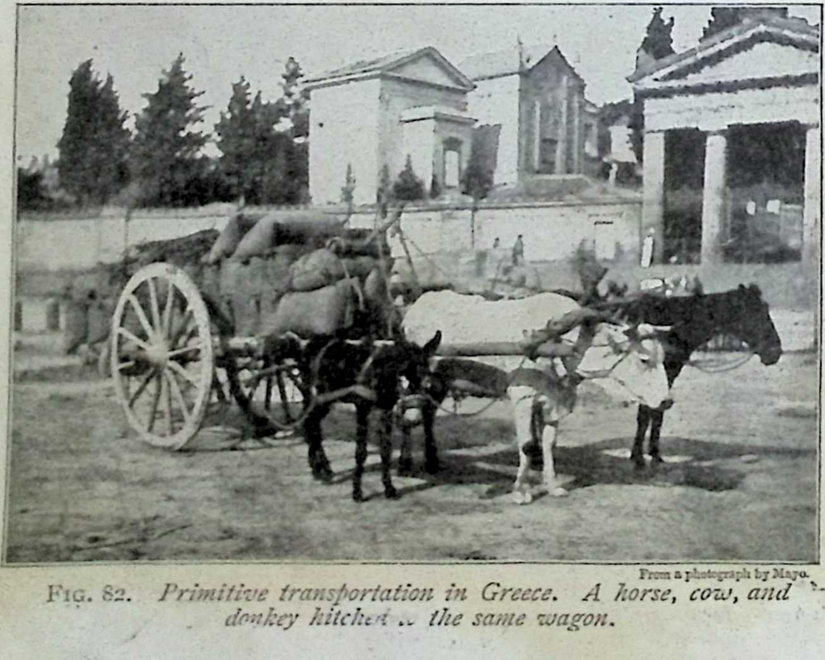


FIG. 81. *Transportation in the Southwest. Miners use pack-horses to carry their outfits over the rough country and through the rivers.*

Manufacturing. Few of the materials taken from the ground, from the rocks, or from the forests in the ways mentioned, are ready for use when they are first secured. Many things have to be done to them while they are being made into things people want.

This changing of so-called raw products into finished goods ready for use is called *manufacturing*, and is well illustrated by the changing of cotton as it is found in the field into cotton cloth as we know it. The cotton is first picked from the plant; then cleaned, separated from the seeds, and packed into bales; later it is spun into threads, and then the threads are woven into cloth.



From a photograph by Mayo.

FIG. 82. *Primitive transportation in Greece. A horse, cow, and donkey hitched to the same wagon.*

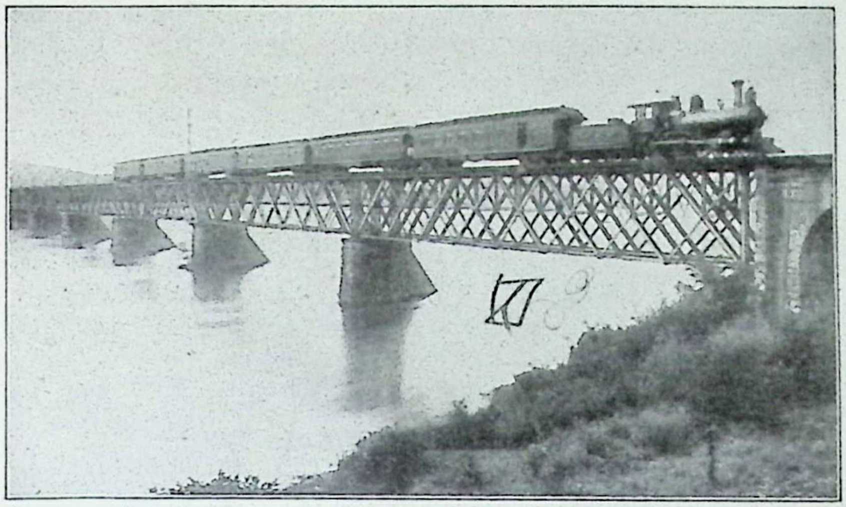


Fig. 83. *A passenger train crossing a river by means of an iron bridge. Railroads are used extensively for land transportation.*

If the cloth is to be colored or printed, it has to go through several more changes before it is finally packed up and sent to the stores to be sold.

Fishing and Hunting. In some parts of the world people get their living by catching fish from the water, or by hunting wild animals for their skins, or for their flesh, which can be sold for food. These occupations are known as *fishing* and *hunting*. Before the United States was settled by white people, hunting was very important, for the wild animals were numerous. The Indians, who occupied the country then, secured a large part of their food through hunting. Now hunting is unimportant except in those regions which cannot be used for any other purpose. Fishing, however, is still important because many people eat more fish than other animal food.

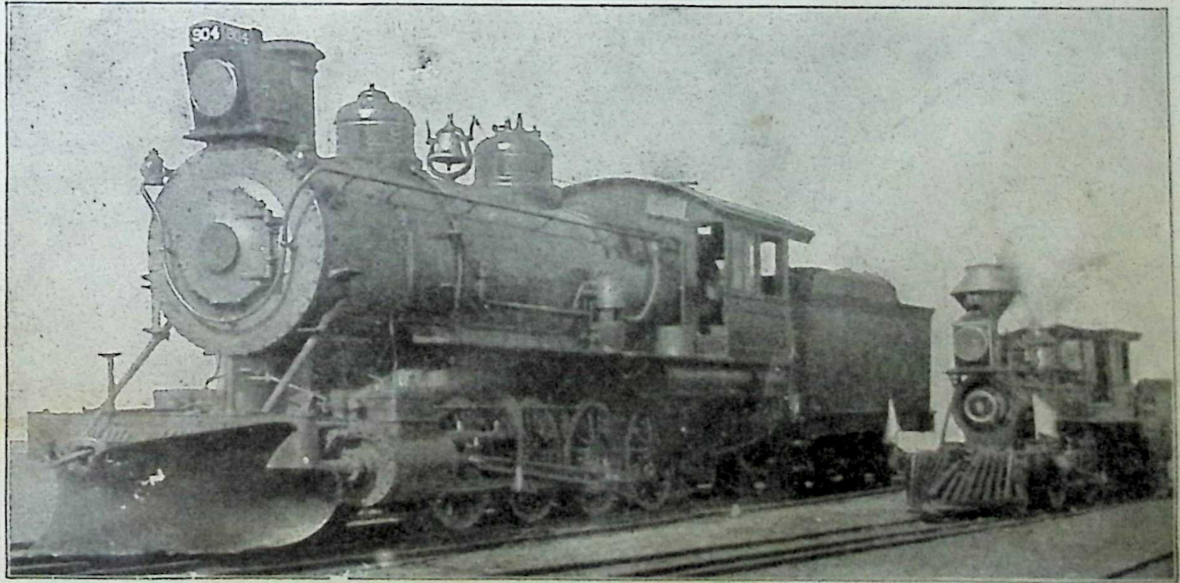


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Fig. 84. *Old and modern types of locomotives used in moving cars by steam. The huge modern type in the foreground is called the "Mogul."*

Commerce; Money. From agriculture, grazing, lumbering, fishing, and mining we get most of the things every one must have in order to live. If we have to buy the products of these occupations from other people, we have to give them something in return. Their goods have to be brought to us and ours have to be sent to them. This buying, selling, and transportation of goods is known as *commerce.*

In order that the people of a city or country may have all the things they need, goods have to be brought from different places, and many people are engaged in commerce in all parts of the world. Indeed, every one engages in commerce when he buys and sells anything.

Some people devote their whole time to getting goods from one place and selling them in others. To exchange one thing directly for another thing is not always easy. Farmers sometimes carry their hay or apples or other crops to a store where they can get sugar, flour, or coffee, or shoes, or cloth in return. Usually, however, it is more convenient for a person having things to sell to get *money* for them.

Money is easily carried about and can be exchanged for anything one needs. Money does not occupy much space, it is easy to handle, it does not spoil, and in every way is more convenient to have as wealth than the same value of food or clothing or any kind of goods.

Summary. We have seen how many people have been helpful to us in securing one of the simplest and most necessary things, cotton cloth. If we should consider all the other things we need every day to keep us alive and comfortable, we should find much the same story. No person can live alone, for every one is dependent on many other people. People in distant regions are working for us and we are working for them.

In order to get money to buy things with, or goods to exchange by means of commerce, it is necessary for every one to have some occupation; that is, some way of earning a living.

Suggestions for Review

(1) Name the crops you have seen growing in a garden or on a farm. (2) Name all the occupations you have seen. (3) Find out some ways which have not been mentioned in which cattle are used. (4) Why are horses used more than cattle for riding or driving? (5) Find out all the animals you can that graze. (6) Mention as many uses of wood as you can. (7) Make a list of all the materials you can that are taken from the ground. (8) What industry that has been mentioned includes the work of the shoemaker, the dressmaker, the clockmaker? (9) What things have you ever bought or sold at a store? (10) Mention the kinds of stores at which your parents trade frequently. (11) If two boys trade jackknives or marbles, what have they done? (12) If you were to play keeping store, what would you need beside the objects to be bought or sold? (13) Why do we sometimes use paper dollars instead of silver dollars? (14) Why is money not made of iron or wood rather than of silver or gold? (15) Why do we not have silver cents instead of copper cents? (16) Find out what the Indians formerly used for money. (17) Where does the grocer get his goods? (18) The butcher? (19) How did the Indians secure their food before white people came? (20) Find out if you can whether they secure it in the same way now?

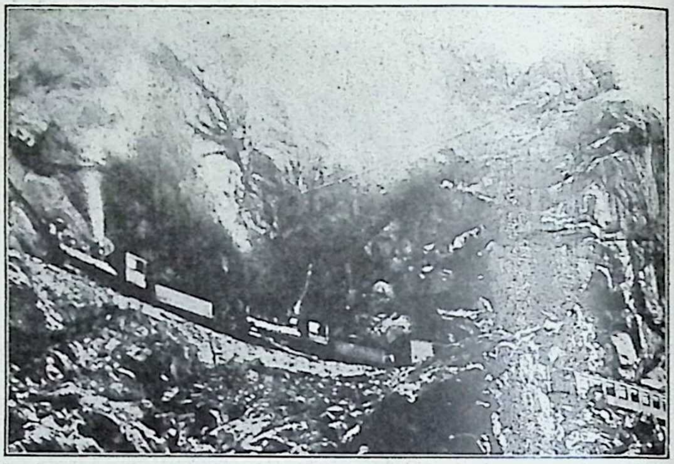

FIG. 86. *Transportation in a mountainous country. Heavy trains on steep grades often require two locomotives to haul them.*

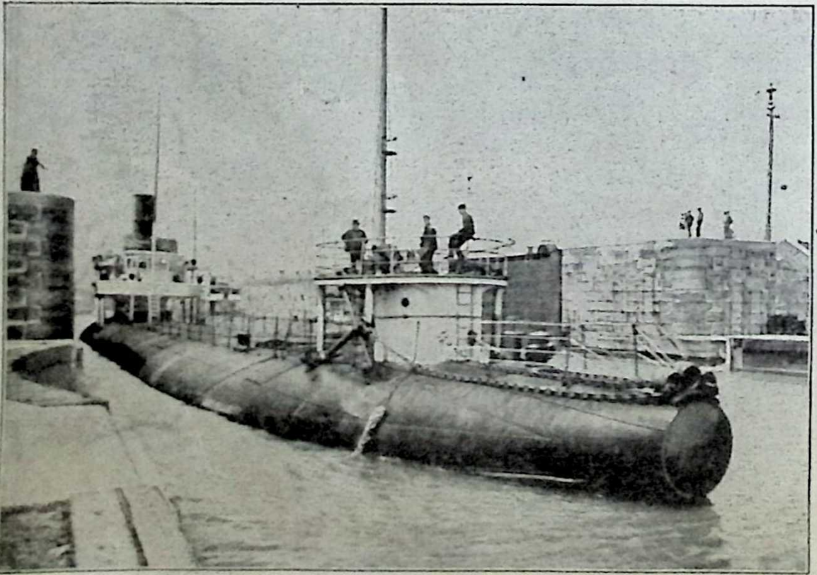

FIG. 85. *Lake transportation. A whaleback freighter passing through the "Soo" locks between Lake Superior and Lake Huron.*

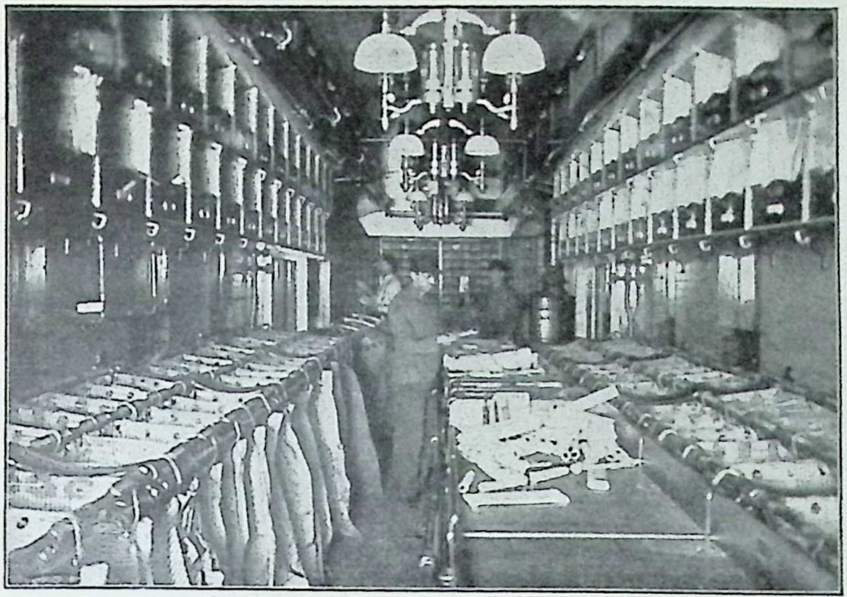

FIG. 87. *A railway post office. Mail is distributed into the sacks and boxes and left at the stations along the route.*

XIV. *MEANS OF TRANSPORTATION*

Transportation. In order to have business and commerce it must be possible to move goods from one place to another quickly. We have seen how the roads (see Fig. 18) and streets in a town or city allow people to move about and carry on business, and we know how, in most countries, goods are brought to the doors in wagons. Horses and wagons can be used for short distances, but there must be some way of carrying larger loads and moving more rapidly than by horses if business is to be carried on between people far apart. *Transportation*, as it is called, is thus an important part of commerce.

Traveling and transportation may be by land or by water. (See Figs. 80, 85, 86 and 90.) On land we walk, ride on horseback, drive in wagons, or ride in cars moved by horses, by steam, or by electricity. (See Figs. 82, 84, and 354.) In some parts of the country, as we have seen, there are no good roads and everything is carried on horseback. (See Fig. 81.) There are still more rugged regions, as in some forests and mountains, where few people live, and where explorers must carry all they need in packs on their backs.

Transportation by Rail. Railroad trains (see Fig. 94) are used for traveling or for carrying goods long distances, and horses are driven for pleasure or for carrying goods short distances.

Steam or electric roads are generally built so as to connect large towns or regions that have many passengers or much freight to be moved.

As such roads require rails for tracks they cannot be built as readily as carriage roads. Like carriage roads, they have to cross streams by means of bridges (see Fig. 83), and have to be built so as to follow the gentle slopes. Hence many railroads are very winding. It is only over land that is nearly level and plain-like that railroads

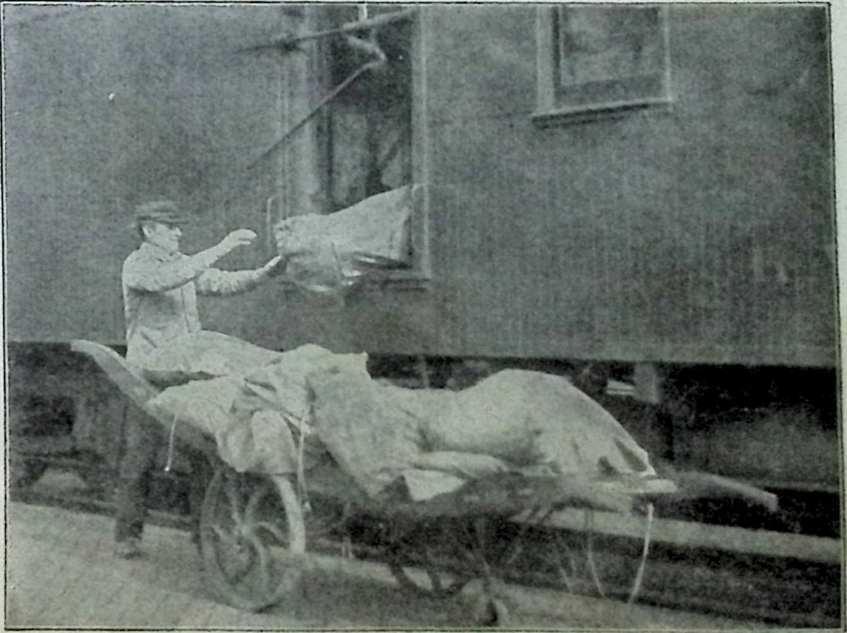

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FIG. 88. *Unloading mail sacks from a railway mail car. The bar in the doorway is used to catch mail sacks from posts when the train is in motion.*

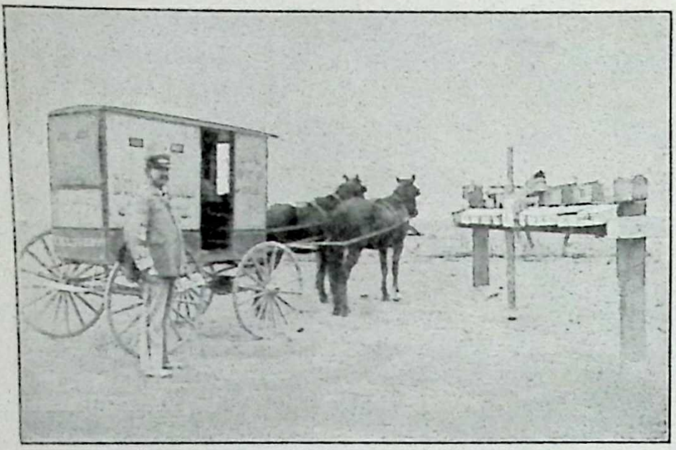

FIG. 89. *Distributing mail at a cross-roads station on a rural free delivery route.*

can follow fairly straight courses. As trains go very rapidly and as the engineers running them cannot see very far ahead, a railroad has to be provided with signals to let the engineers know when the track is clear for them to go ahead, and to warn them when to stop.

Transportation by Water. Travel by water is either in steamships, in sailing vessels, or by canal boats which are usually drawn along by horses or mules. Sailing vessels and steamships are used on our larger lakes (see Fig. 85), on rivers where the water is deep enough, and on the ocean (see Figs. 90 and 91), which is a great body of water that covers more than seven-tenths of the world. Our large rivers, therefore, are very important routes of commerce.

Other Aids to Commerce. A great deal of business can be done without the necessity of traveling if people can only get word quickly from one place to another.

There are many ways of communicating quickly with people at a distance, but the *Post Office*, which, as we have already seen, is managed by the national government, is the most common means of carrying messages from one place to another. (See Figs. 87, 88, and 89.)

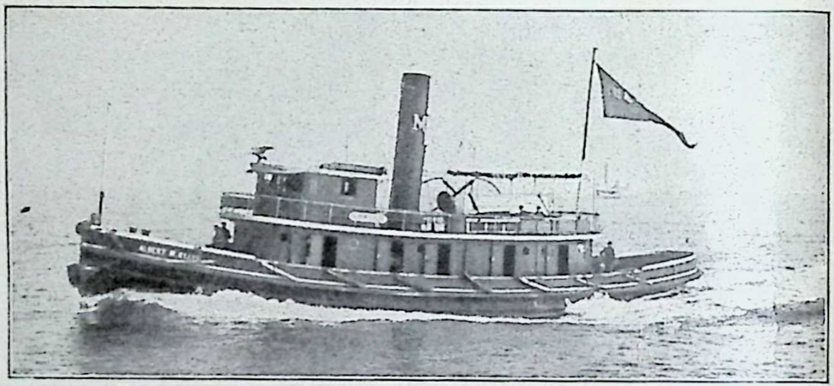

FIG. 91. *A tugboat used for towing large ships or floats in harbors.*

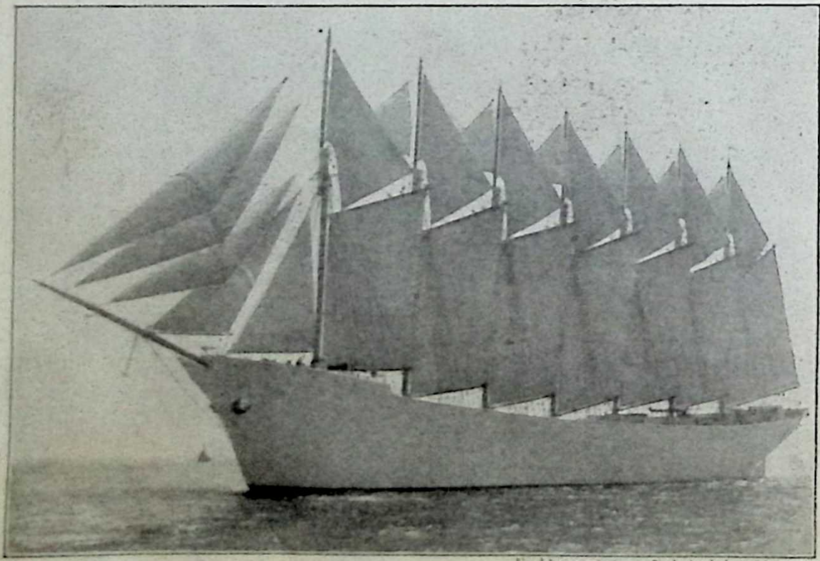

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FIG. 90. *A seven-masted schooner. The largest sailing vessel carrying freight in the world.*

The *telegraph*, by means of which messages are sent very rapidly along wires by electricity, is also helpful, especially when people are in a great hurry. (See Fig. 92.)

In recent years *telephones*, which enable people to talk with one another though many miles apart, have come to be much used for business and pleasure.

The *typewriter*, a machine for writing letters rapidly and clearly, has made it possible to do business more quickly and accurately. (See Fig. 93.) Letters may be written so rapidly on a typewriter that the same number of people can carry on a far larger business than when all letters were hand written.

Many other things might be mentioned which help people buy and sell more quickly, but those mentioned are the most important, and are the ones that nearly every one can see in use about him.

FIG. 92. *The telegraph and telephone are aids to commerce. Each town has one and each city many large stations from which the wires and cables radiate to offices and homes.*

Suggestions for Review

(1) Why are freight trains generally slower than passenger trains? (2) Why do other vehicles have to keep out of the way of wagons carrying the mail? (3) Why are electric cars taking the place of horse cars? (4) Find out all you can about the way railway trains are kept from collision. (5) Why are double-track roads better than single-track roads? (6) What are express companies, and what do they do? (7) Why are there so many railroads in certain parts of the country and so few in other parts? (8) How are railroads kept in repair? (9) Why do railroads have tunnels in some places? (10) Name the important railroads near your home. (11) What have you ever seen in a freight station? (12) Describe what you have seen in a passenger station. (13) Describe the different ways in which goods are brought to your town or city or the one nearest where you live. (14) What do the postmarks on the front and the back of a letter mean? (15) Describe some of the ways by which mail is carried and delivered. (16) Describe all that happened to a letter from some friend before it reached you. (17) How long was it on the way?

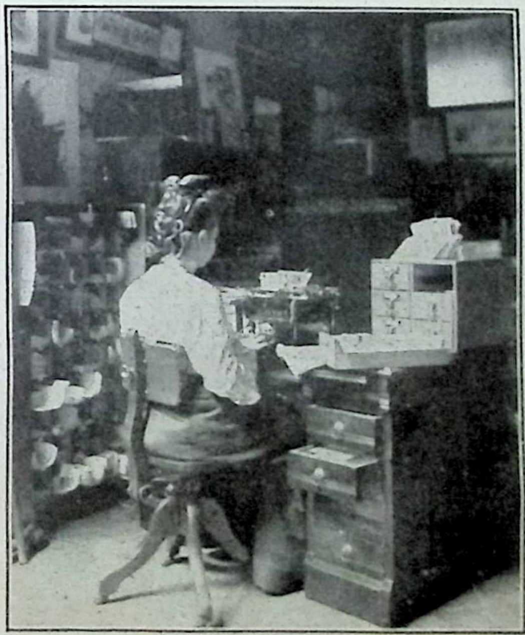

FIG. 93. *The typewriting machine is an aid to the quick and accurate transaction of business.*

XV. DIRECTION, DISTANCE, AND MAPS

Units of Measure. In order to carry on business with people we must know where they live, and how far away they are from us. Some of the Indians of the United States measure how far away a certain object is by telling how many times the sun would set during a horseback trip to the place. We measure the same thing in a different way and say the *distance* from one place to another is so many *feet* or *miles*.

A *foot* is twelve inches long; that is, a little longer than this book is high. Most grown people can cover about three feet in each step

In measuring long distances it is more convenient to use the *mile*, which is 5,280 feet in length.

Soldiers carrying a heavy load can march about fifteen miles a day. Some horses can trot a mile in about two minutes,

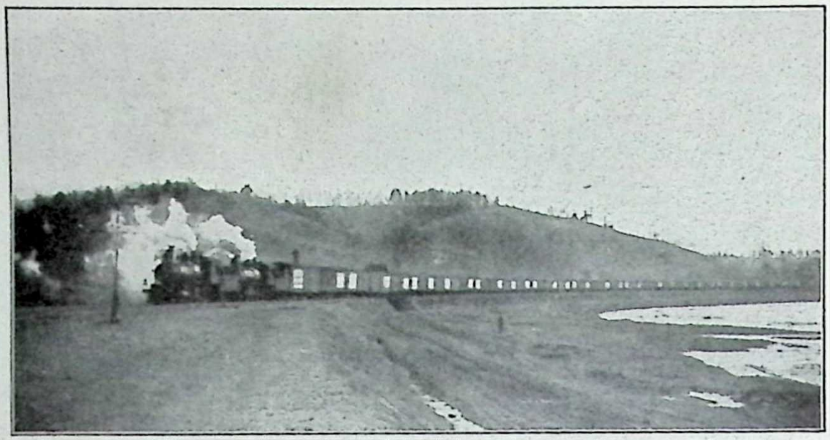

FIG. 94. *The transportation of freight. It sometimes requires two powerful locomotives to move long trains.*

and most people can walk a mile in fifteen or twenty minutes. Some steam trains (see Fig. 86) run a mile or more in a minute, which is very rapid travel. Freight trains, however, do not often run faster than a mile in three minutes.

Points of Direction. It is necessary to know not only how far away a place is, but which way to go to reach it. A spider in the center of his web is nearly the same distance from all parts of the edge. If a fly lights on the web, the spider wants to know which way to start to get to the fly; that is, in what *direction* the fly is from him.

We usually find out direction by means of the sun. The sun in all parts of the world rises in the *eastern* part of the sky and sets in the *western* part, which is *opposite* to the east. If we face the sun at sunset our *right* hand is toward the *north* and our *left* is toward the *south*.

In this part of the world the sun rises to the east of us, is to the south of us during the day, and sets in the west. Halfway between sunrise and sunset is *noon*, when a shadow always points north. In the southern regions of the world the sun rises in the eastern part of the sky, is to the north during the day, and sets in the western heavens, and the shadows, of course, point south at noon. North, east, south, and west are called the *cardinal* (or principal) *points of direction*, because all other directions over the surface of the earth are measured in reference to these points.

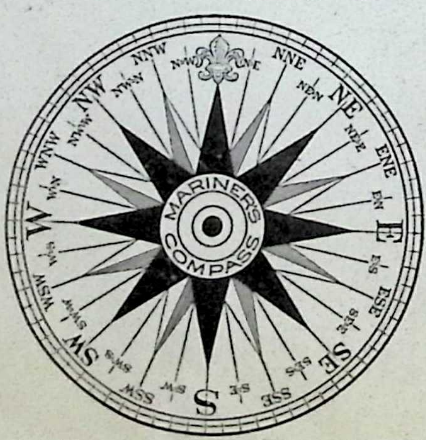

FIG. 95. *A compass card.*

The Compass. It is usually more convenient to find the cardinal points by means of a compass than by the sun. (See Fig. 95.) The *compass* is an instrument that has a special kind of needle supported so that it will swing easily. This needle always points toward the north, and from it the south, east, and west can be easily found. The compass does not, however, point exactly north, and is not as sure a sign of direction as a shadow at noon.

North may be found also at night by means of the North Star. The North Star is a small star in the northern part of the heavens about which other stars seem to revolve in a circle every twenty-four hours. The North Star can be readily found by means of the Great Bear or the Big Dipper. The line joining the two stars marking the outer edge of the dipper always points toward the North Star. These two stars are known as the Pointers. (See Fig. 99.)

Sailors often find the direction they are going by noting the position of the North and other stars. Indians and many other people in different parts of the world use the stars in a similar way.

Between the cardinal points are many other directions, as northeast, which is halfway between north and east; southeast, halfway between south and east; southwest, halfway between south and west; and northwest, halfway between north and west. There is a

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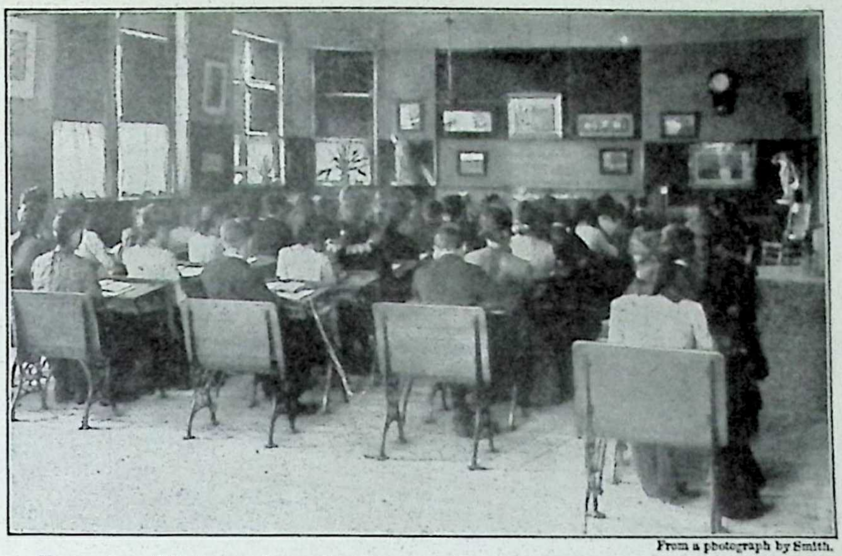


From a photograph by Smith.

FIG. 96. *Picture of a schoolroom, of which a map is given below.*

many other divisions used for careful measurement of direction, but these eight are all that we need to know at present.

Many church spires and tall buildings have wind or weather vanes that always point in the direction from which the wind is blowing. Usually the vane is placed above four branching arms which point north, east, south, and west, and have at their ends a large N., E., S., and W. These letters show the cardinal points and make it easy to tell direction at any time.

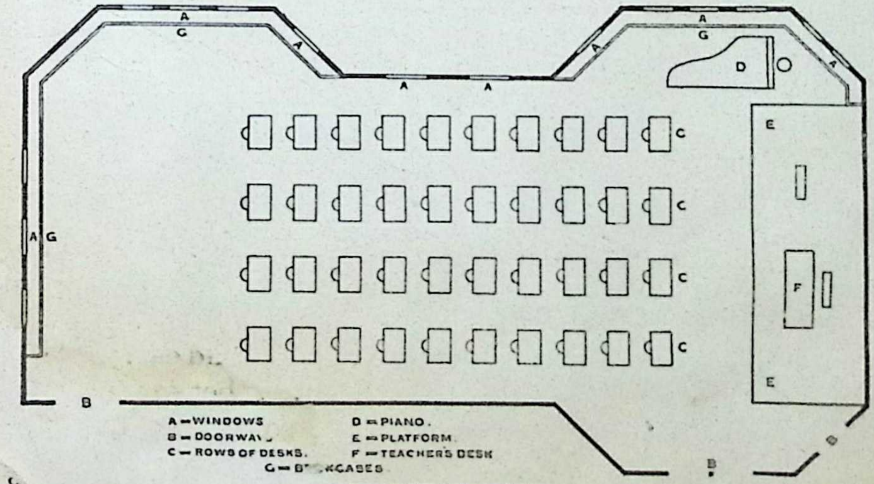
Uses of Maps. If we know the direction and the distance from each other of a number of places, we can make a drawing showing how they would look if we could get above them far enough to see them all at once. Such a drawing or plan is called a *map*. (See Fig. 100.) Maps may show a small region or a large one. We can make a map of our school desk, our schoolroom, of a room at home, of the yard, the farm, the town, the state, or of some larger area. (See Figs. 96, 97, and 98.)

Maps enable us to study the direction and distance, or, as we say, the *position*, of many different things at the same time, and hence are of much use, especially in learning about distant peoples and places.

Map Scale. In this book the maps cannot be larger than the pages of the book, but they can show an area of almost any size. If it is a large area, we cannot show so many small features of the region as we can if the area is small. (See Fig. 97.)

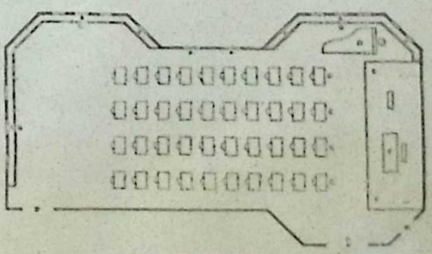
A map covering a large region is said to be on a smaller *scale* than a map of the same size covering a smaller region. (See Fig. 98.) Hence we need to know the scale of the map in order to know whether the area mapped is large or small.

Every map, therefore, should show its scale in some way. Usually a line is drawn on the map, say an inch long, and it is stated that that inch on the



Scale: *20 feet = 1 inch.*

FIG. 97. *A map of the above schoolroom (Fig. 96), with index to objects in the room.*



Scale: *20 feet = ½ inch.*

FIG. 98. *The same map on a smaller scale.*

map stands for one foot, or yard, or mile, or for several miles on the earth

Wall Maps. Besides such maps as those in this book, nearly every school has large maps to be hung on the wall, called *wall maps*. Such wall maps are necessary in order to show a portion or all of the earth in such a way that many can study it at the same time.

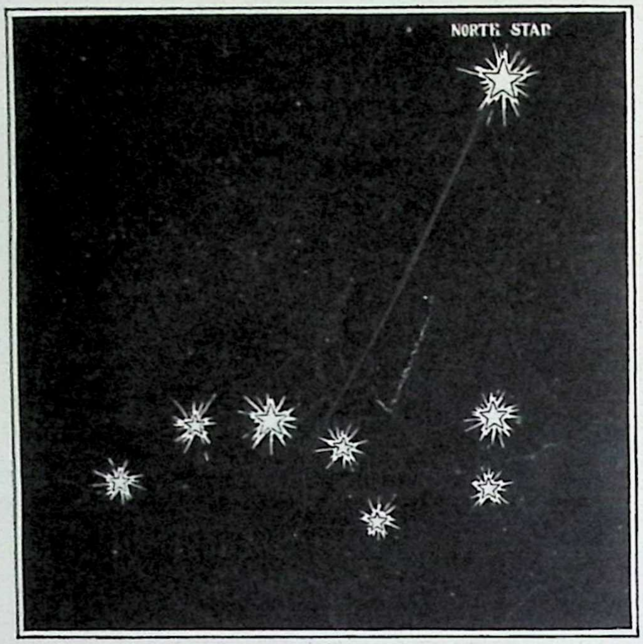


FIG. 99. *The North Star and the Big Dipper with the two pointers on the right.*

Maps are drawn so that the south part is next to you where you can most readily read the names on the map. The north is toward the opposite side, east is toward the right side, and west toward the left side. As we shall see later, however, some maps are drawn so that their sides do not run exactly north and south.

When a map is hung on a wall the top is the north and the bottom the south. This does not mean, however, that things represented at the north of the map are higher than those shown at the south. It merely means that we have hung the map in a certain way so as to read it easily.

The map is a *plan*, and in order to show things exactly as they are on the earth it must be placed in the same position as things on the earth; that is, flat on a table or on the earth, and with *the north of the map toward the north cardinal point.*

Suggestions for Review

(1) How long does it take you to walk a mile? (2) Find out how far it is between your home and your school. (3) If you live in a city, how many blocks are there to a mile? (4) How many miles long is your town or city? (5) Find out some ways to tell the direction from which the wind is blowing. (6) In what directions can you go along your street or road? (7) Draw a map of the route from your home to your school. (8) Draw two maps of your room at home, using different scales. (9) Secure a map of your home region and find out from it the direction of your house from those of several friends. (10) Learn to tell time by the sun without any clock. (11) Find out how people can tell direction when they have no compass, and when the sun is not shining.

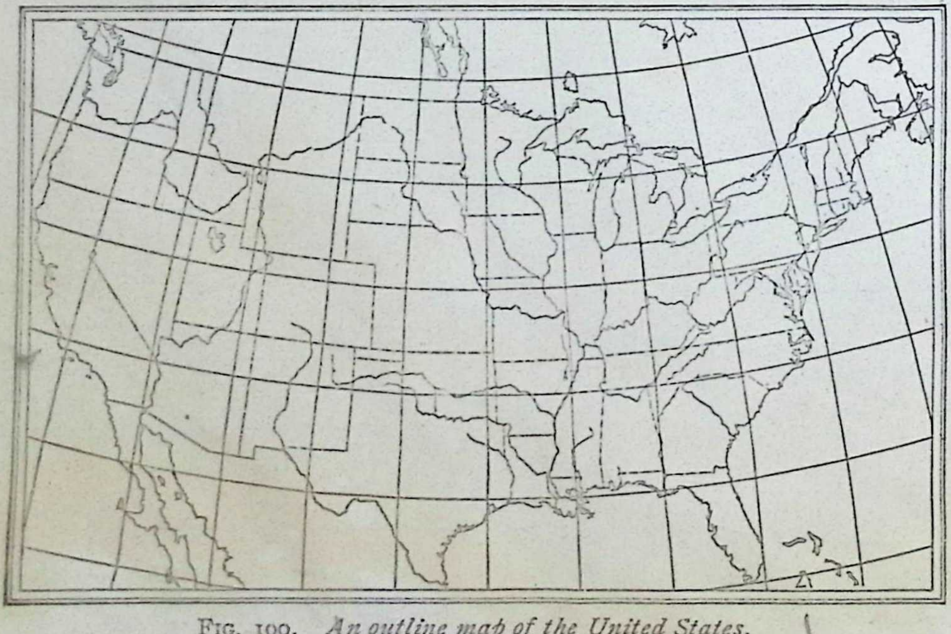


FIG. 100. *An outline map of the United States.*

bareheaded men.

PART II

WORLD RELATIONS AND THE CONTINENTS

XVI. THE WORLD

What the World Is. We sometimes describe a distant country in which we are interested by saying it is in a certain part of the *world*. Before we can know much about the different countries, their products, their peoples, and their occupations, we must know about the *world as a whole*, of which the land about our homes forms but a very small part.

The world is really a great ball or globe, made up of rock, water, and air, and called the *Earth*. This globe is so large that there is room on it for many millions of people, and one could not visit every part of the world even if he traveled all his life.

The North and South Poles. If we take a large orange and hold it up so that the stem end is at the top, we may think of it as a small globe that will tell us something about the much larger globe on which we live. Let us think of north as toward the stem end and south toward the blossom end. Then no matter where we start from, if we carry our finger north it will reach the stem end, the most northern point. This most northern point on the world is called the *North Pole*.

In the same way if we go south from any spot we shall reach the most southern spot, or *South Pole*. The south pole is exactly halfway around the world from the north pole. By remembering what we learned about east and west on a map we can see which way east and west are on the orange.

Around the Globe. Let us take some spot on the orange to represent our home on the earth. We can move our finger around the orange in any direction and come back to where we started. The nearer our starting point is to the north or south pole of the orange, the shorter the distance around in an east and west direction.

Oranges are so small that it is better to have larger balls or *globes* to represent the earth. Globes, like maps, can be made of different sizes and can show a great deal about the world, or only a few things, according to their scale. A large globe, therefore, can show more things than a small globe.

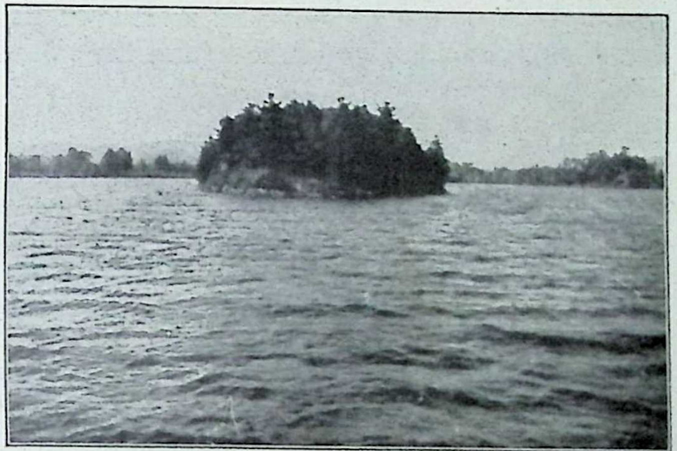


FIG. 101. *An island, a small area of land surrounded by water.*

Continents and Oceans. From a good-sized globe we can see how the land and water are arranged over the world. The great land regions are called *continents* and the smaller areas of land surrounded by water are called *islands*. (See Fig. 101.) Water covers more than seven-tenths of the world. We usually think of this great mass of water as divided into several *oceans*, which, like the continents, have been named.

The United States is one of the countries of the continent of *North America*. West of North America we find the *Pacific Ocean*, and east of it the *Atlantic Ocean*.

If we cross either of these oceans we come to the continent of *Eurasia*, which is often spoken of as two continents, called *Europe* and

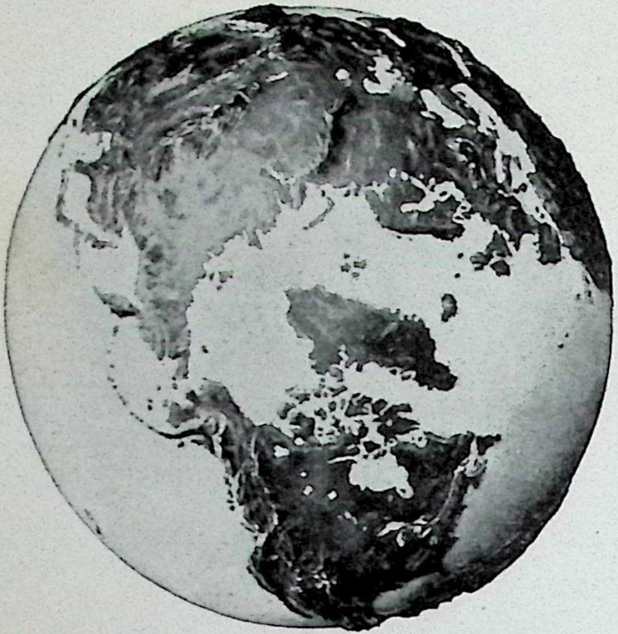


FIG. 102. *The Northern Hemisphere. Notice the large amount of land in this part of the world.*

Asia. If we cross the Pacific we reach Asia; if we cross the Atlantic we reach Europe.

The other continents are *South America,* which lies southeast of North America; *Africa,* which lies south of Europe, and *Australia,* which is nearly south of Asia. In the Pacific Ocean are many islands, some of which are very far from any continent.

If we lived on one of the southern continents we should have to cross an ocean to get to another southern continent, just as we do in traveling between North America and Europe or Asia. Between South America and Africa we find the Atlantic Ocean, as we found it between North America and Europe. In the same way the Pacific Ocean lies west of South America and east of the continent of Australia.

Between Australia and Africa is another ocean known as the *Indian Ocean.* These oceans are the most important ones in the world because they lie east and west of great continents, and border the inhabited regions of the world.

The Northern and Southern Oceans. South of the Atlantic, Pacific, and Indian oceans, and surrounding the south pole, is the *Antarctic* or *Southern Ocean,* which is little known because it lies in such a cold part of the world.

North of the Atlantic Ocean and connected with it by many narrow stretches of water is the *Arctic Ocean.* The Arctic Ocean is connected with the Pacific by the narrow *Bering Strait,* and is thus really a sea almost surrounded by land. The Arctic Ocean was named before people knew much about it or about the differences between an ocean and a sea, and it has retained the name first given to it.

The Hemispheres; The Equator. If we study the size and location of the continents on the globe, we see that the larger part of the land of the earth is in the northern half of the world, or in the Northern Hemisphere, and the greater amount of water in the Southern Hemisphere. (See Figs. 102 and 103.)

All points which are exactly halfway between the poles are said to be on the *Equator,* which means *a line of equal division.* The equator, therefore, divides the earth into half spheres, or *hemispheres.* The world is also sometimes divided into the

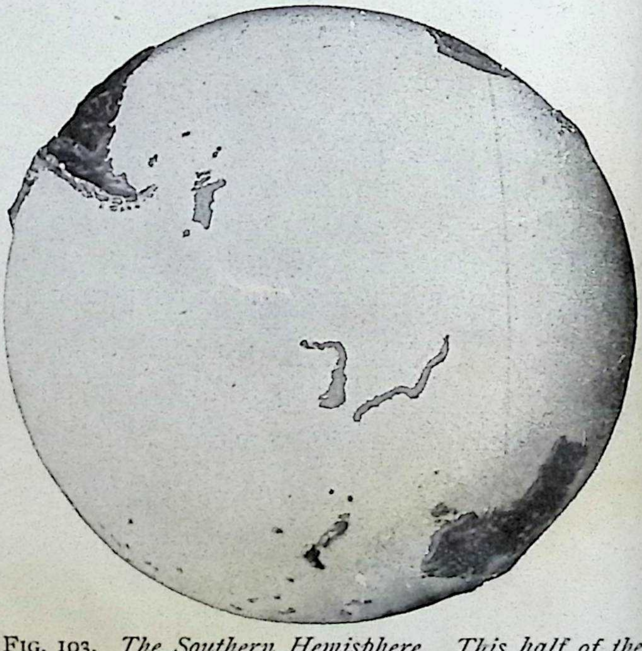


FIG. 103. *The Southern Hemisphere. This half of the world is almost entirely water.*

Eastern Hemisphere, containing Eurasia, Africa, and Australia, and the Western Hemisphere, containing the Americas. (See Figs. 104 and 105.)

Ocean Voyages. From this brief study of the globe we see that in order to carry on commerce or to travel between different continents we must cross an ocean. A voyage by steamer across the Atlantic from North America to Europe takes eight or nine days, except for the fastest boats, which make the trip in a little over five days.

Since the Pacific is twice as large as the Atlantic, a voyage across the Pacific from North America to Asia takes more than two weeks, and a voyage around the world in an east and west direction, without stopping very long in any of the different countries on the way, takes over two months.

Suggestions for Review

(1) From a point in the Northern Hemisphere trace on a globe with your finger several voyages in different directions around the world. Which route is the shortest? The longest? (2) In what direction from the United States is Australia? Africa? (3) In what direction from Western Eurasia is South America? (4) In what direction from Eastern Eurasia is South America? North America? (5) Cut up several apples or oranges into halves and find out if the earth could be divided into other hemispheres than those given in this book. (6) Find out how long it takes to go from the United States to Australia and to Asia by steamer. (7) Find out the quickest time made by a steamer in crossing the Atlantic. (8) Compare this with the time it took Columbus to cross on his first voyage of discovery. (9) Find out what sailors mean by "crossing the line." (10) Why do many steamships carry sails?

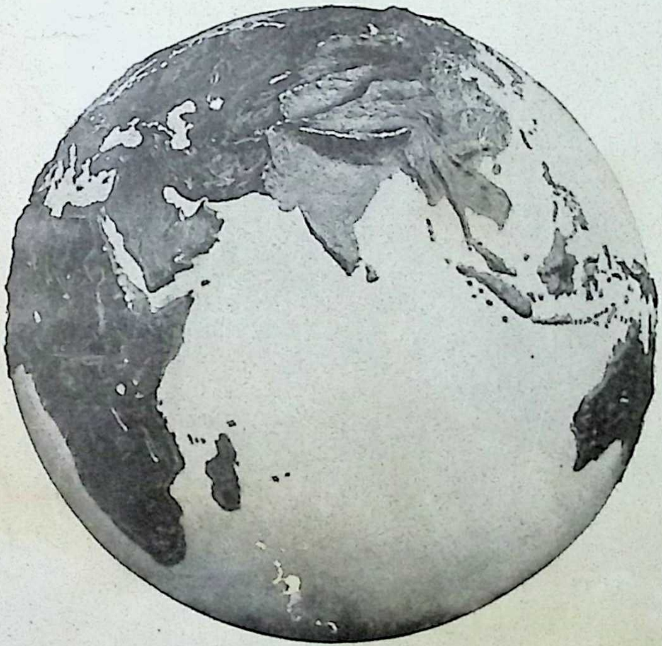


FIG. 104. *The Eastern Hemisphere. It contains Eurasia, Africa, and Australia.*

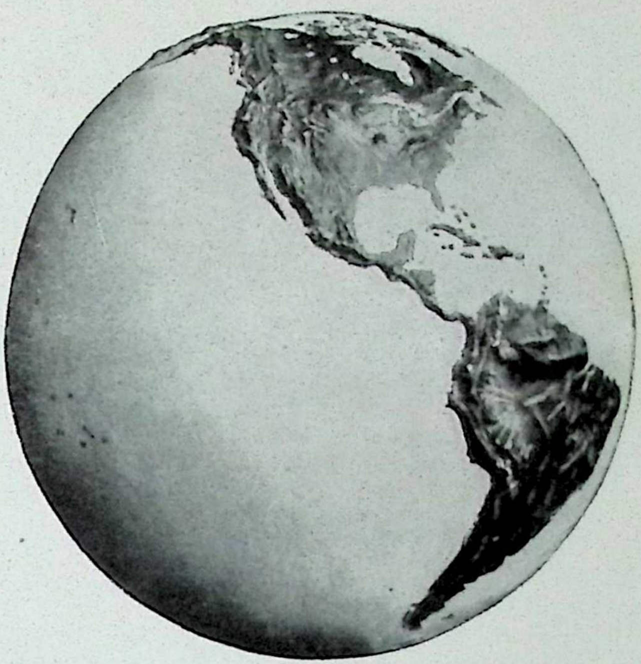


FIG. 105. *The Western Hemisphere. Our homes are in this hemisphere, which contains North and South America.*

XVII. THE OCEAN AND OCEANIC COMMERCE

The Shore Line. The part of the ocean of the most interest to us is the *coast line;* that is, the line where the ocean joins the land. The coast line, or as we sometimes say, the *shore line*, may be very straight or very crooked. If it is straight, it is exposed everywhere to the violence of the waves, and hence vessels cannot easily make a landing. If it is irregular, there are places where

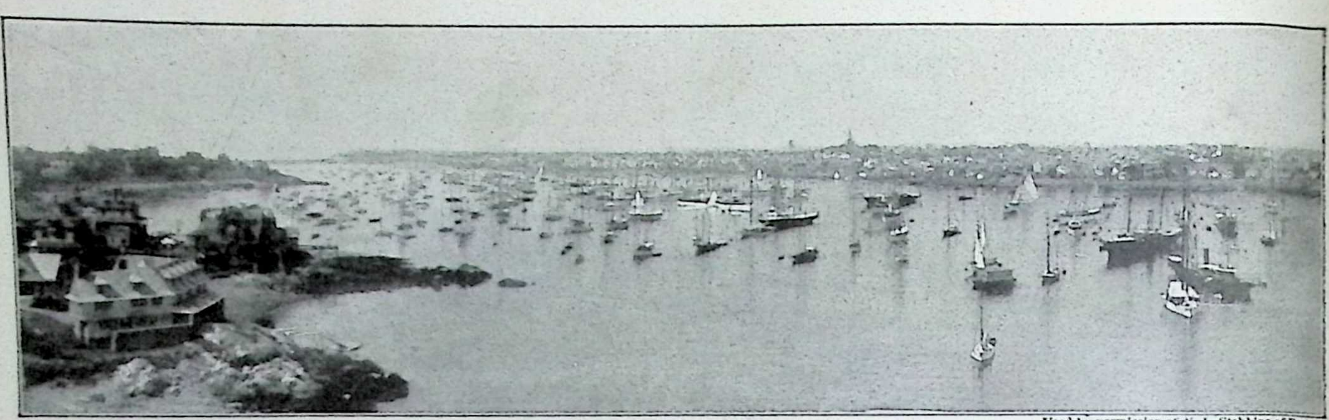


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FIG. 106. *A view of Marblehead Harbor, showing in the distance the narrow neck of land which connects the peninsula on the left with the mainland. Notice that most of the little boats have anchored in shallow water in the inner bay.*

the water extends into the land, forming *bays.* (See Figs. 106 and 107.)

Shore Changes. The shore line of an ocean or of a lake is constantly changing, because the waves are always beating upon it and wearing it away. The wind blowing over a body of water of any size sets it in motion. The waves rise and fall and finally reach the shore. There the waves strike a blow that is sometimes hard enough to make the ground tremble and shake. The pebbles rattled along by the waves are hurled against the cliffs, which are gradually worn away.

The loosened rocks are carried along by the waves and left in some bay, forming a *beach* (see Fig. 107), or they may be carried out into deep water and dropped on the bottom. The points projecting between the bays are made of strong rocks, as is shown by the fact that the waves have not worn them away as yet. On shores where the rocks are all of nearly the same strength the beaches may be many miles long without a break; or there may be cliffs. In either case the few harbors make the shore unsafe for sailors during a storm.

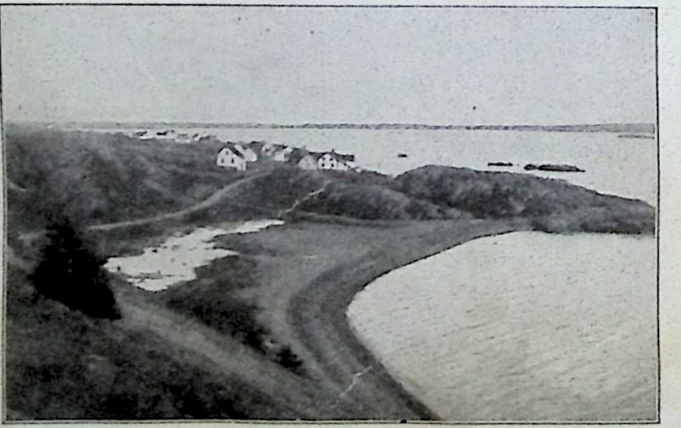

FIG. 107. *A small bay separated by a cape from the larger bay beyond.*

Harbors. A bay usually forms a good harbor because it offers protection from wind and waves so that vessels can anchor in safety. (See Figs. 107, 108, and 109.) The waves cannot rise as high in a bay as on the larger ocean, and sailors when near the shore usually try to get into a harbor in time of storm. (See Fig. 106.)

A good harbor is therefore an excellent place, as a rule, for the location of a city. (See Fig. 106.) The *largest city in the United States is New York,* on New York Bay, which is a magnificent harbor. (See Fig. 157.)

Points and Necks of Land. On some coasts the bays are numerous and each bay may have many smaller bays on its edge. Then the coast is very irregular. Between one bay and the next there is, of course, a tongue of land extending out into the water and ending in a point of land. Such a point is called a *cape.* (See Figs. 107 and 113.) If the cape is high and ends in a cliff, it is often called a *headland* or *promontory.* (See Fig. 108.)

The tongue of land may be joined to the mainland by only a low, narrow *neck.* A slight increase in the height of the water would separate the tongue from the mainland and make it an island. An area of land which is thus nearly surrounded by water is called a *peninsula,* which means *almost an island.* (See Fig. 113.) Sometimes the word peninsula is applied to any large projection of land into the water, as when we speak of the southern peninsulas of Europe or of Asia.

The narrow neck of land connecting one large body of land with another is an *isthmus.* The best known are the Isthmus of Suez, connecting Africa and Asia, and the Isthmus of Panama, connecting North and South America. (See Figs. 131 and 346.)

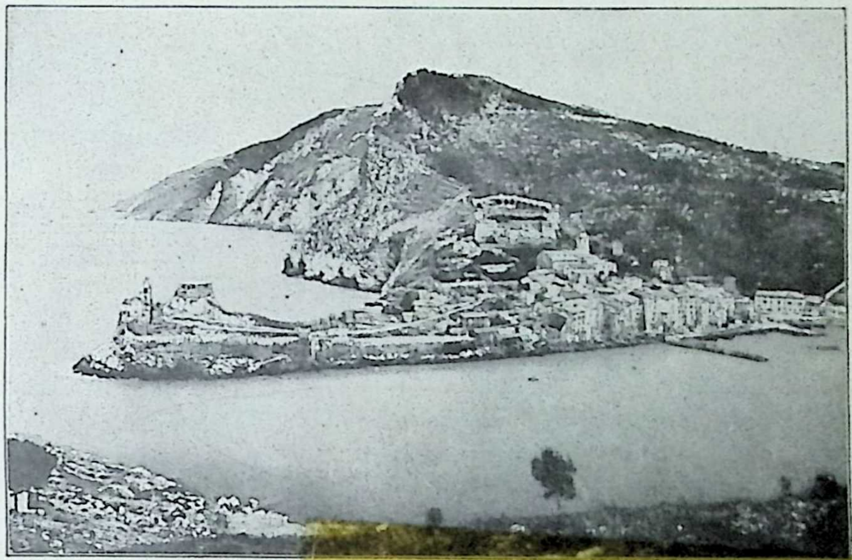

FIG. 108. *A small peninsula extending out from a headland or promontory. It acts as a breakwater for heavy seas, protecting the harbor within.*

Other Bodies of Water. A very large body of water nearly enclosed by land is called a *sea* or a *gulf,* as the Caribbean Sea or the Gulf of Mexico. (See Figs. 130 and 132.)

A narrow neck of water connecting two large bodies of water is called a *strait,* as Bering Strait or the Strait of Gibraltar. (See Figs. 130 and 255.) If a bay is shallow and runs more or less parallel with the coast, it is sometimes called a *sound,* as Long Island Sound. (See Fig. 143.)

All these names for forms of water and land we find convenient in talking about the different parts of the world, just as it is convenient to have names for our friends.

Ocean Travel and Commerce. We have already seen the many different ways people travel and carry on commerce over the land. Travel over the ocean is all by vessels or ships of some kind. Formerly all water traveling was by sailing ships, which were driven through the water by the wind. Now these are used only where there is no need for haste, as in carrying certain kinds of freight, in fishing, and in pleasure sailing.

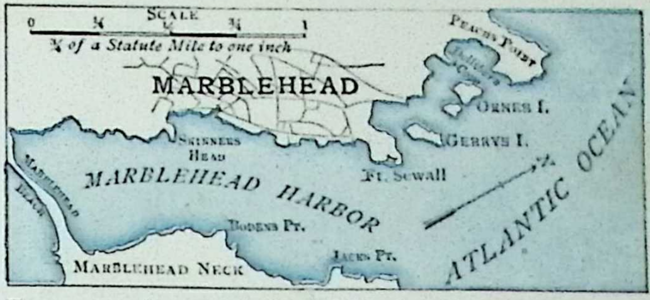

FIG. 109. *A map of Marblehead and the harbor. It shows the form of the shore, the well-protected harbor, and the natural location of the town.*

The mails, the passengers, and much of the freight that must go rapidly from one country to another is carried on fast steamships. Some steamships are over six hundred feet in length and large enough to carry train loads of freight and as many passengers as there are people in a small city. Vessels may cross the ocean from one country to another, or they may go along the coast, between different places in the same country. Thus we have *oceanic* and *coastwise* commerce. (See Fig. 114.)

Lighthouses. In order to have water commerce successful, a vessel must be able to get quickly and safely from the deep water of the ocean to the land where goods and passengers can be unloaded. A vessel is in very little danger, even during a storm, on the deep sea, because it can be driven along for miles without danger of striking the land. When, however, a vessel approaches land it is necessary for the officers sailing the vessel to know its position.

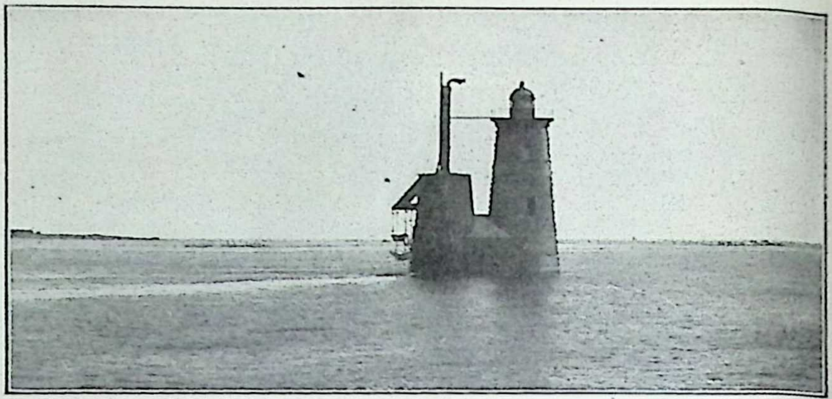

FIG. 111. *A lighthouse near a dangerous coast. It is built on a hidden rock at the entrance to a harbor.*

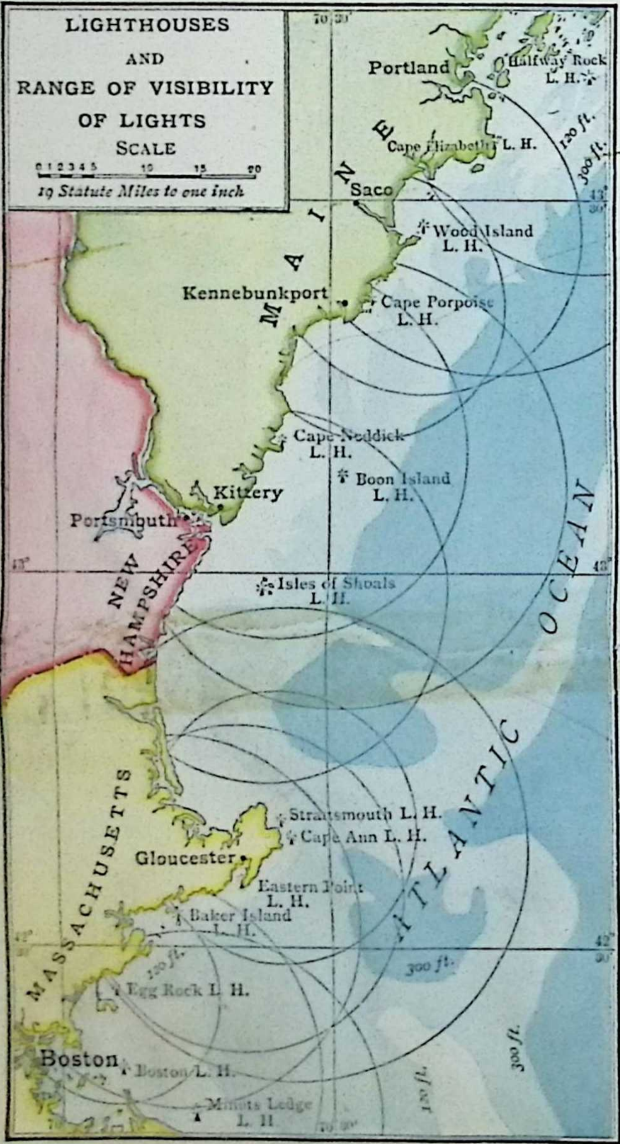

FIG. 110. *The parts of circles indicate how far the different lights can be seen by sailors.*

So at certain points along the coasts of most lands there are tall buildings known as *lighthouses*, each of which has a powerful light. This light, which can be seen for many miles, warns the sailor that land is near. (See Figs. 110 and 111.)

In dangerous places near the shore or in harbors where lighthouses cannot be built but where a light is needed, *lightships* are anchored.

Life-Saving Stations and Pilots. Along especially dangerous coasts *life-saving stations* are placed, usually about four miles apart. (See Fig. 112.) Men are always on watch at these stations for vessels in distress or danger, and in case of shipwreck the men go out in *lifeboats* to save people. All these many helps to commerce are provided and paid for by the national government.

In every port there are a number of men called *pilots*, who know all about the channels to be followed, and whose business it is to guide vessels in and out of the harbor.

Every harbor also has many powerful little steamers called *tugboats* for helping large ships or sailing vessels. (See Fig. 91.)

How Wharves Aid Commerce. The landing place in a harbor where the vessels load and unload is known as a pier or wharf. Wharves are platforms built out into the water so that deep vessels can come up to them easily (See Fig. 115.) A wharf also allows more than one vessel to be loading or unloading at the same time, and hence the number of vessels that can use a harbor at one time is greatly increased by building wharves. (See Figs. 115 and 116.)

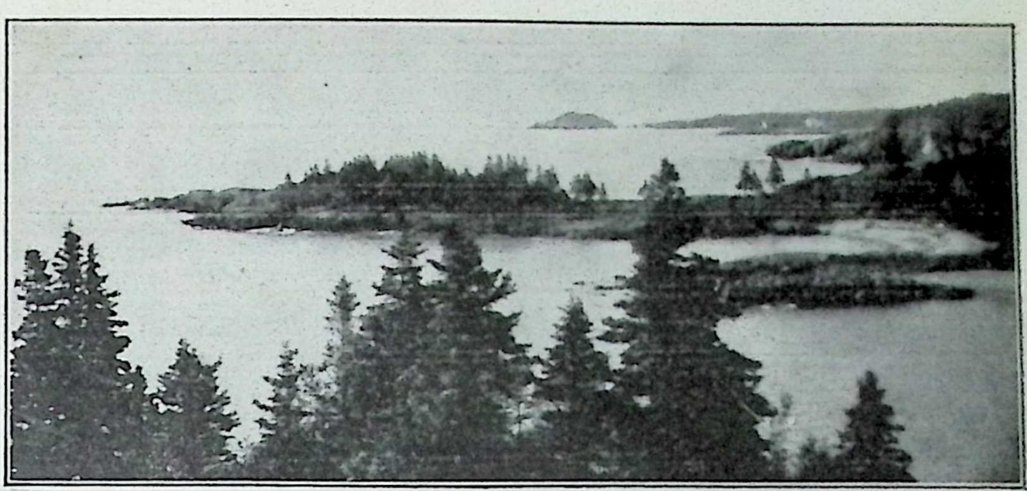

FIG. 113. *A picture showing a cape, a peninsula, and an isthmus. This is a characteristic bit of New England shore.*

Telegraphing Across the Ocean. We have already learned how very much the mails, the telephone, and the telegraph help business and commerce on the land. The mails are also carried across the oceans, between different countries.

The telegraph is also used across the oceans. The wires are strung together as cables which lie on the bottom of the ocean. (See Fig. 117.) Cables have been laid across the Atlantic Ocean for many years between Europe and North and South America, but the first cables across the Pacific between North America and Australia and Asia were not finished until 1903.

Messages are now being sent long distances by telegraph through the air without any wires. Indeed messages have been sent in this way across the Atlantic Ocean, and in the course of time it is probable that wireless telegraphy will become a very important means of communication. This method of telegraphing was perfected by an Italian scientist, Signor Marconi.

Suggestions for Review

(1) If you live near a river or lake, find out at what part of the shore the boats are kept. (2) Are they protected, and if so why? (3) In a lake or even in a small puddle find illustrations of cape, headland, strait, peninsula, isthmus. Describe and draw them. (4) Find out the name of the largest vessel in the world and how large it is. (5) Find out how many passengers can be carried on some large steamship. (6) Find some coastwise routes of commerce in the United States; some oceanic routes from the United States. (7) Find out how sailors are warned of danger on a foggy night. (8) Describe some different kinds of lighthouses. (9) Find out why it is almost impossible for a lifeboat to sink. (10) Find out who built the first ocean cable. (11) Find out about the work of the life-saving men.

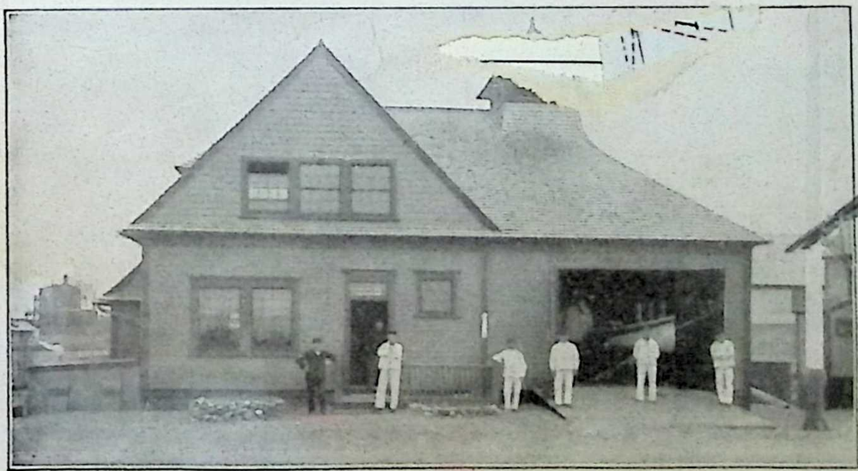

FIG. 112. *One of the life-saving stations which are kept by the United States Government along dangerous coasts.*

XVIII. THE PRODUCTS OF THE WORLD BROUGHT US THROUGH COMMERCE

Where We Get Coffee and Cocoa. We have already seen that many of the things we need every day are secured through trading with our neighbors. All over the world neighbors are buying and selling, and the people of

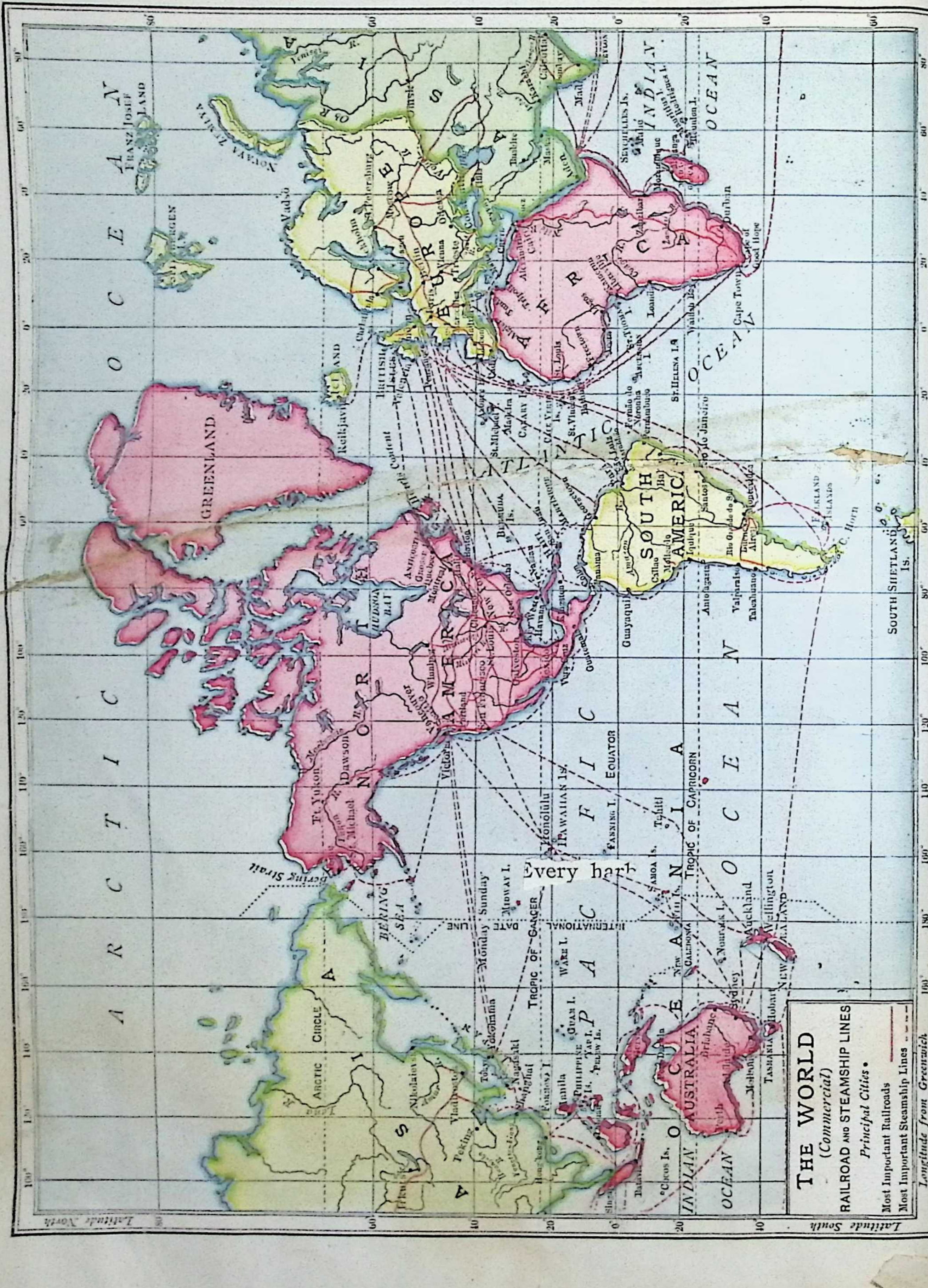

FIG. 114.

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Revised, 1907.

distant parts of the world are carrying on commerce with us.

We found this out from the fact that the coffee which nearly every family uses daily is not raised in our own country. The larger part of our coffee comes from the great countries to the south of the United States. Some of it comes from *Mexico* and *Central America*. These countries send us also much of our cocoa, which is made from the seeds of the cacao tree, and great quantities of bananas, which come by water to our seaports.

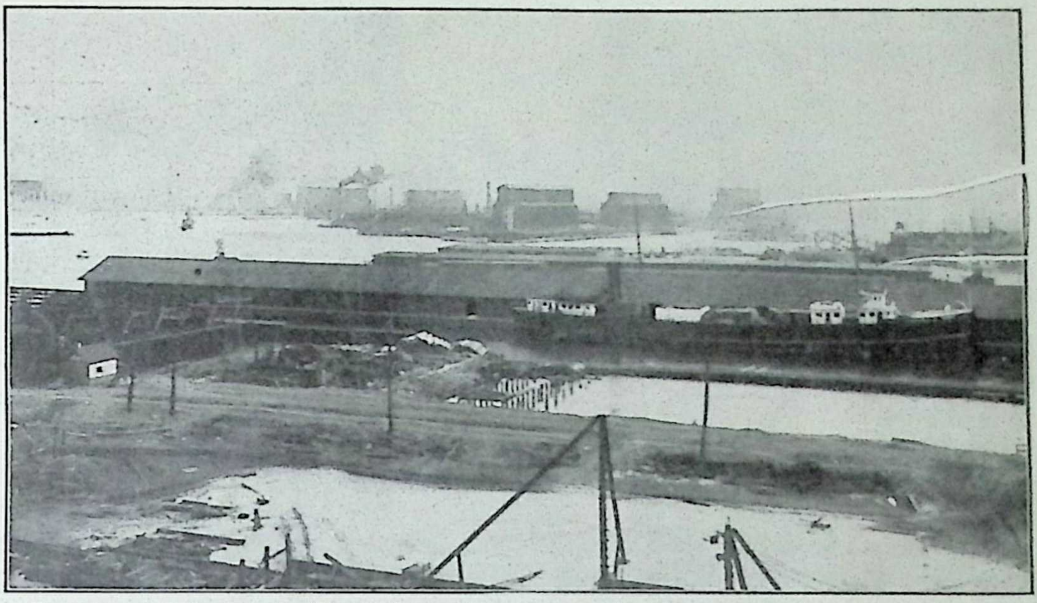

FIG. 115. *Wharves built out from the shore so that large vessels can easily land.*

How People Live in Mexico and Central America. In Mexico and Central America people live very differently from the way they live in our own country. Their houses are often little more than sheds, with the roof covered with straw instead of boards. (See Fig. 120.) The people practically live out of doors, with just enough shelter to keep off the rain and the sun. The dress they wear is very much like our summer clothes, and is light and loose so as to keep them as cool as possible. It is evident, therefore, from the way the people live that it is always warm in these countries, and that there is no winter such as we know.

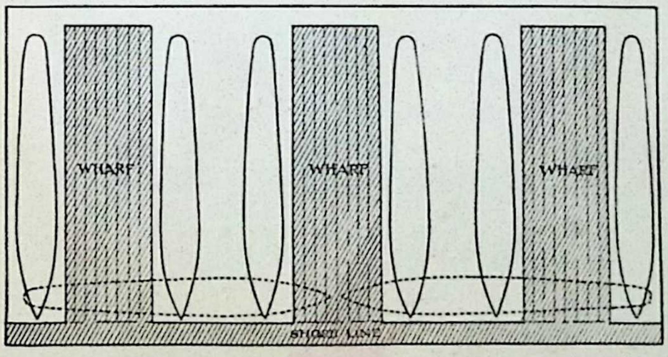

FIG. 116. *Diagram showing the increase of shore line by the building of wharves. Where two vessels were formerly docked, space for six is now provided.* (*See Fig. 115.*)

Plant and Animal Life in Warm Regions. In a large part of Central America there are other things that would remind us of our summers. Most of the trees are always green and the forests seem full of animals and small plants. The animals and plants, however, are not like those we know in the woods in our own country.

In these warm regions everything grows readily and it takes but little work to get a good crop from the soil. Hence the people do not have to hurry and work as hard as the farmers we know. We go to these countries for cocoa, coffee, bananas, and other common articles of food produced only in warm climates. The continuous warmth of this region enables things to grow there that we cannot raise at home, except at great cost in greenhouses.

The Far North. In the *far northern part* of the continent of North America and in *Greenland* the conditions are very different from those we have just described. There

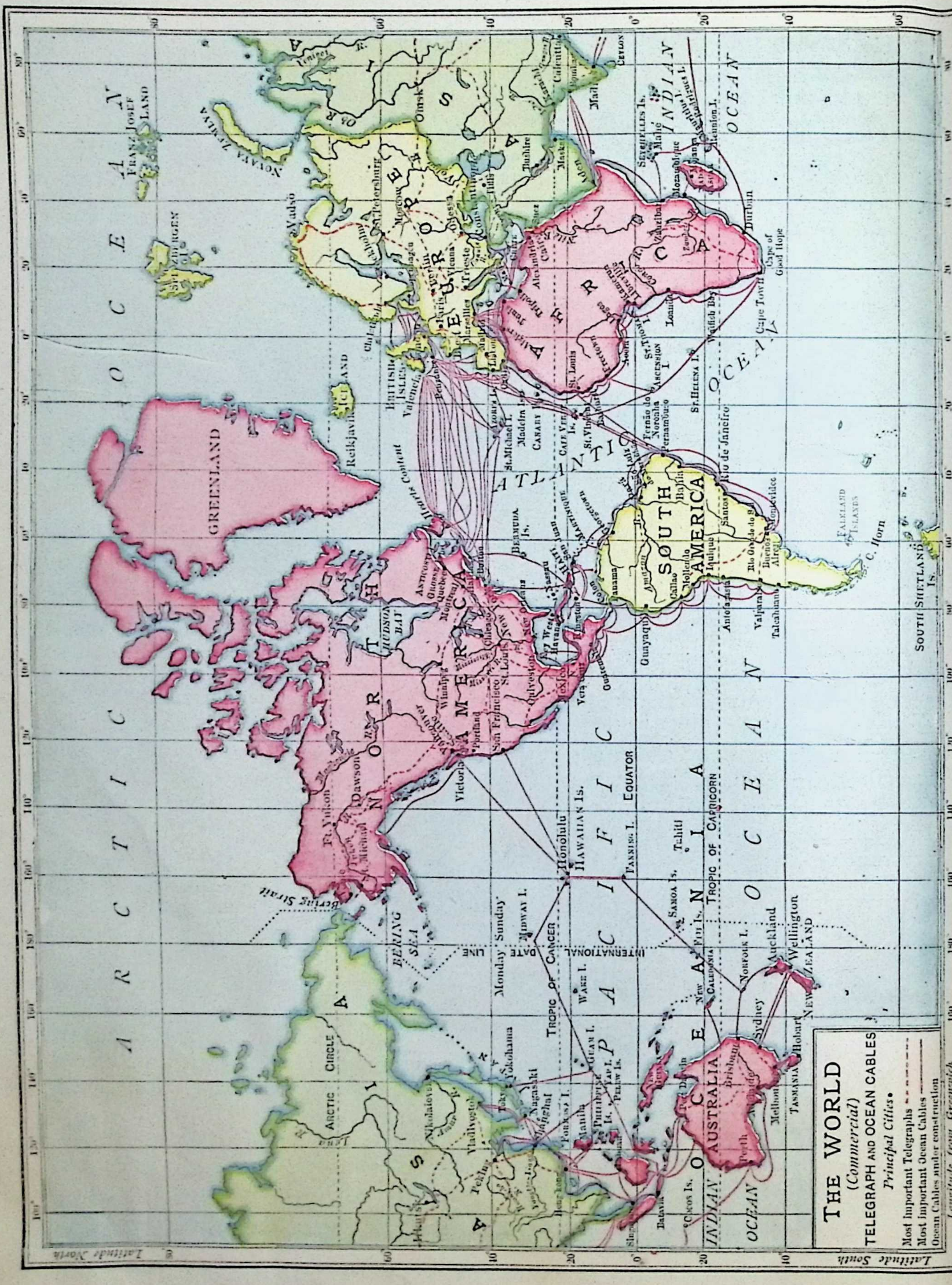
THE WORLD
(Commercial)
TELEGRAPH AND OCEAN CABLES
Principal Cities •
Most Important Telegraphs
Most Important Ocean Cables
Ocean Cables under construction
Longitude from Greenwich
Latitude North
Latitude South
ARCTIC OCEAN
ATLANTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
NORTH AMERICA
SOUTH AMERICA
EUROPE
AFRICA
ASIA
AUSTRALIA
OCEANIA
GREENLAND
EQUATOR
TROPIC OF CANCER
TROPIC OF CAPRICORN
ARCTIC CIRCLE
INTERNATIONAL DATE LINE
Monday Sunday

FIG. 117.

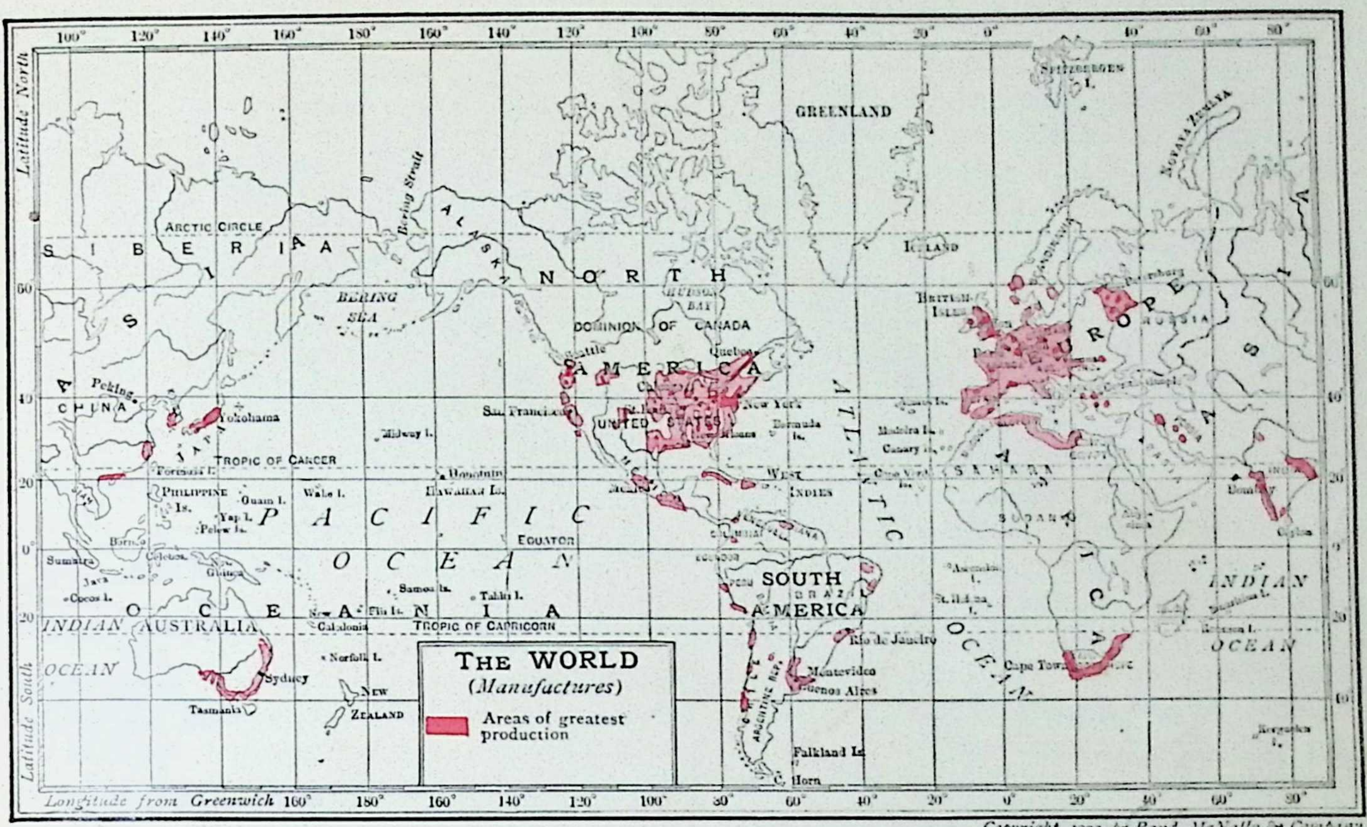

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FIG. 118. *A Map of the World, Showing Distribution of Manufactures.*

are no forests, and in some regions not even bushes. In the summer, berry bushes and a few other plants may bloom, but no crops can be raised.

The people, who are either *Indians* or *Eskimos*, live by trapping the beaver, mink, otter, bear, or by hunting seals, whales, walruses, and other animals that have fat or valuable furs. They use the *fat* of the seals, whales, and walruses for *light* and *fuel*, and the skins of the fur-bearing animals for clothing at all seasons of the year. (See Fig. 119.)

The *furs* which they do not need are sent to other parts of the world. So from these northern countries we get many of the furs for our coats, muffs, robes, and other things which we use in winter to keep us warm.

How People Live in the Cold Regions. As these northern Indians and Eskimos wear fur clothing all the time, they must have much weather similar to the winter season in the coldest parts of the United States. In summer their days are fairly but not uncomfortably warm; their long winters are extremely cold.

The kind of weather in these cold regions is shown also by the kind of houses the people live in and by their ways of traveling. The winter houses are built of snow and ice, but are very warm, because there is little chance for the wind to get in. The summer houses are tents made of skins. The people travel largely by sleds drawn by teams of dogs over the ice and snow, which cover the country most of the year. (See Fig. 227.)

The food of these people is very different from that of people who live in warm countries. They eat much fat, because fat produces heat in the body.

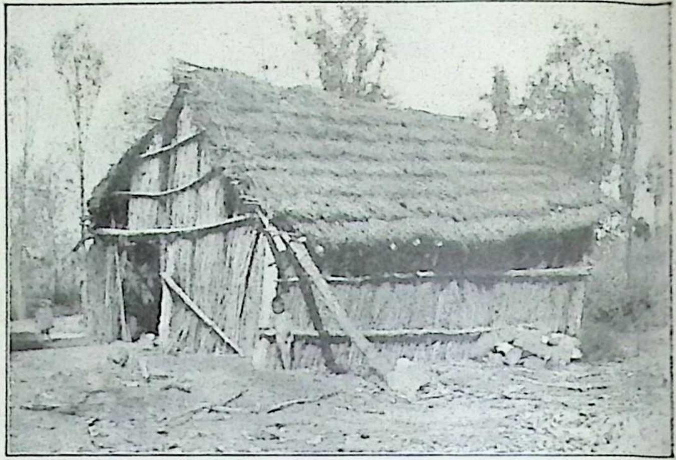
We thus find that the climate and the products are very different at the two extremities of North America.

South America. The same thing is true in South America, only there the more southern countries are the colder.

The northern countries of South America are the greatest coffee-producing regions of the whole world. They send us also our *rubber*, which is obtained from the juice of a tree. We sometimes have small rubber plants as ornaments in our houses, but they never grow more than a few feet high, no matter in how warm and moist a room we keep them.

The people in these countries live out of doors even more than do the people of Central America, and they wear very few clothes. The weather is always as warm as a warm summer day in our country.

From southern South America we get *wool* and *skins* from sheep, and *hides* and other products from cattle. (See Fig. 123.) This is evidently, therefore, a *grazing* country like parts of the United States, and must resemble our own land in climate. The extreme southern part of South America does not carry on commerce with us, because the region has no valuable products. The Indians there dress in skins and remind us of the Eskimos of North America.



From a photograph by May

FIG. 120. *A native Mexican hut. The covering is made of twigs and woven leaves.*

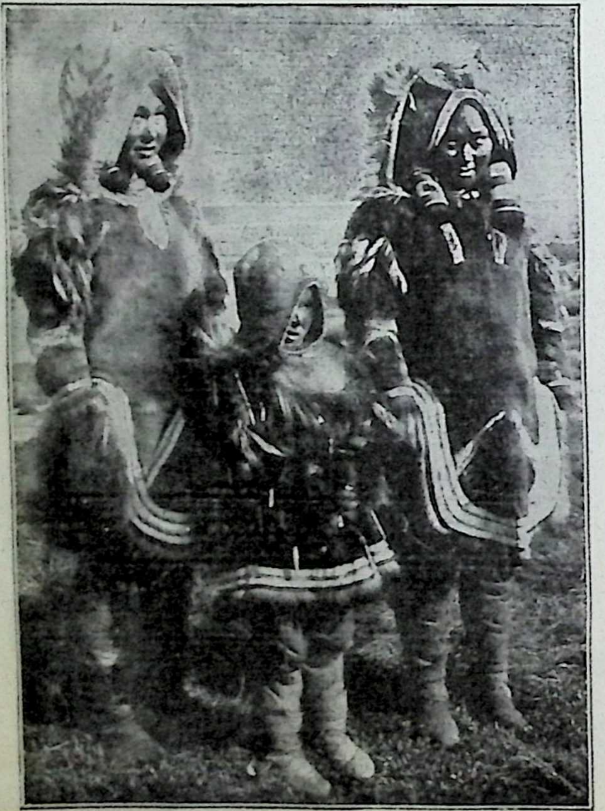


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FIG. 119. *Eskimo women and child. Their clothes and boots are made of skins.*

Products Depend on Climate. Nearly all parts of North and South America, therefore, are known to us through their products, which we see, and perhaps use, every day. Both the cold and the very warm regions of these two continents carry on commerce with our milder or more temperate regions, and by studying the products sent to us in commerce we can learn something about the climate of these countries.

Products of Eurasia. So far as commerce is concerned, Europe is the most important continent to the United States, for we send to Europe by far the larger part of the products we have to sell. As we have already seen, however, Europe is only the western portion of Eurasia, which is the largest mass of land in the world.

In northern Eurasia we find the coldest part of the world, and from this region we get *furs* as we do from northern North America. From southern and western Europe we secure *olives*, *olive oil*, *wine*, *cheese*, and many manufactured goods, like *cutlery*, *silk*, *linen*, and *cotton embroideries*. The olive and the wine-producing grape grow only in the warm or mild regions which have a climate like the southwestern United States.

In the southeastern part of Eurasia is a great region where *rice*, *spices*, and *tea* are around World

raised. Most of the tea we drink comes from here, and the warmest section furnishes our *black* and *white pepper*, *nutmegs*, *ginger*, and *common spices*. The people live in houses which will keep them as cool as possible at all seasons, as they do in the hot regions of Central and South America.

Australia. Southeast of Asia, in the Southern Hemisphere, is the smallest continent, Australia, which is famous for its *wool*, *hides*, and *skins*. These products remind us of southern South America, and the people are engaged in the same kind of occupations. (See Fig. 121.)

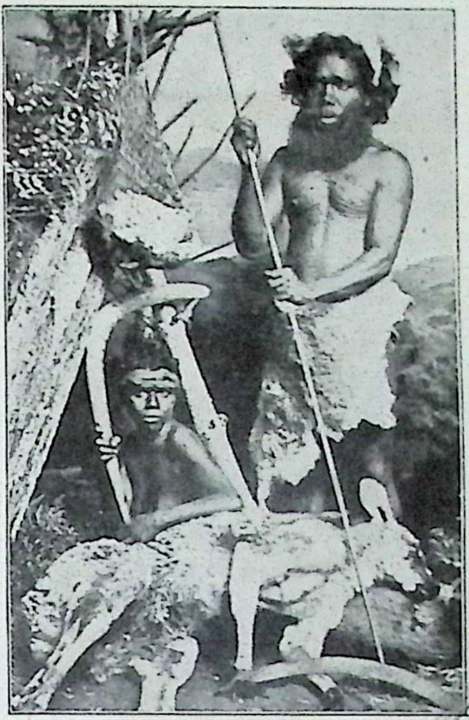

FIG. 121. *Australian natives. The skin of the kangaroo is very useful.*

Africa. The continent of Africa is the least known of all the continents, but it sends goods of great value to other countries. From northern Africa comes a kind of *cotton*, which indicates that the climate must be very like that of the extreme south of our own country.

From central Africa, which is largely inhabited by wild tribes, mostly black people, we get the greater part of our *ivory*, which is used for paper cutters, knife handles, piano keys, and for many kinds of ornaments. Ivory is procured from the tusks of elephants, which live only in hot countries. (See Fig. 323.)

The forests, the houses, and the dress of the people, the animals, many of which have no hair or fur to keep them warm, the insects, and the brilliantly colored birds all show that central Africa is one of the warmest regions of the world.

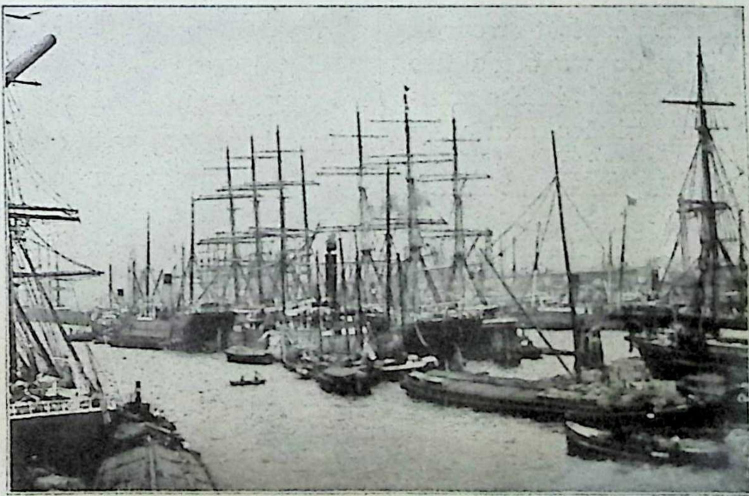

FIG. 122. *A busy harbor, showing ships loaded with produce which go to all the continents of the world.*

In southern Africa there is a great region which produces food products like those of our own country. Hence our commerce with this region is very small in amount. The only special product from South Africa is diamonds. Diamonds can hardly be considered necessary for any one, and therefore we cannot think of South Africa as especially important to us.

Commerce Unites the Continents. From this glimpse we see that all parts of the world may be of importance to each one of us nearly every day. At any meal we may eat food that has come from several very remote countries, and many shop windows show us goods that have come from all the continents. Thus not even a great country can live all by itself, for it cannot produce all the things its people need. (See Fig. 122.)

As the railway train and the wagon make the farm products near to every city child, so the farmer is really a helpful neighbor though he does not live next door perhaps. Commerce really makes all the continents neighbors. Thus the whole world is important to us,

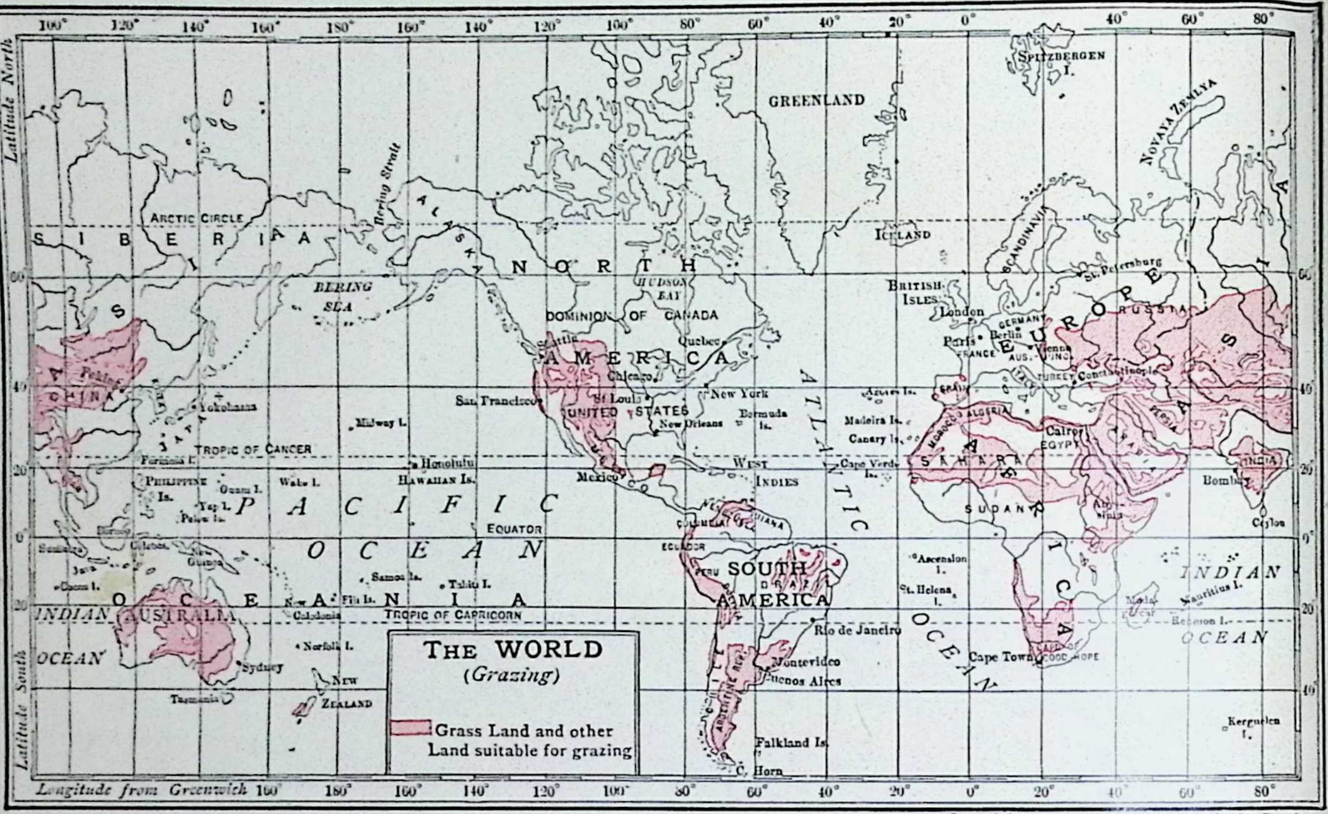

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FIG. 123. *A Map of the World, Showing the Areas of Grazing Land.*

and we are citizens not only of our own town, but of the state, the nation, the continent, and the entire world.

Suggestions for Review

(1) Find out as many articles of food as you can that come from warm countries. (2) Which are warmer, light-colored or dark-colored clothes? (3) Which would you expect people to wear in warm countries? (4) Why do we often use light-colored umbrellas or parasols in the summer? (5) Find out about whales and why they were formerly very important. (6) What kinds of skins have you seen used for wraps? (7) Find out what American has done the most exploring in the cold north. (8) What do the people of cold countries eat in the winter? (9) Why is very little known about the great southern ocean? (10) What clothes would you need for a trip from the extreme southern part of our continent to the extreme north? (11) From a globe see what parts of Europe are as far north of the equator as is the United States. (12) What parts of Africa are crossed by the equator and hence are in the hottest regions? (13) In what kind of climate and in what countries do elephants chiefly live? (14) Find out if all elephants have tusks. (15) What do we secure from the tusks of elephants? (16) In what other ways are elephants important?

XIX. THE CLIMATE OF THE WORLD

What Climate Is. From what we have already seen, we can readily understand that the most important reason why one part of the world can best raise one thing and another part something else is because their climates differ, and different kinds of climate are needed for different crops.

By *climate* we mean the kind of weather a region has in the course of a long time. We know, for instance, that in our own home region the heat of the summer or the cold of the winter never goes beyond certain bounds. There is, as a rule, a certain

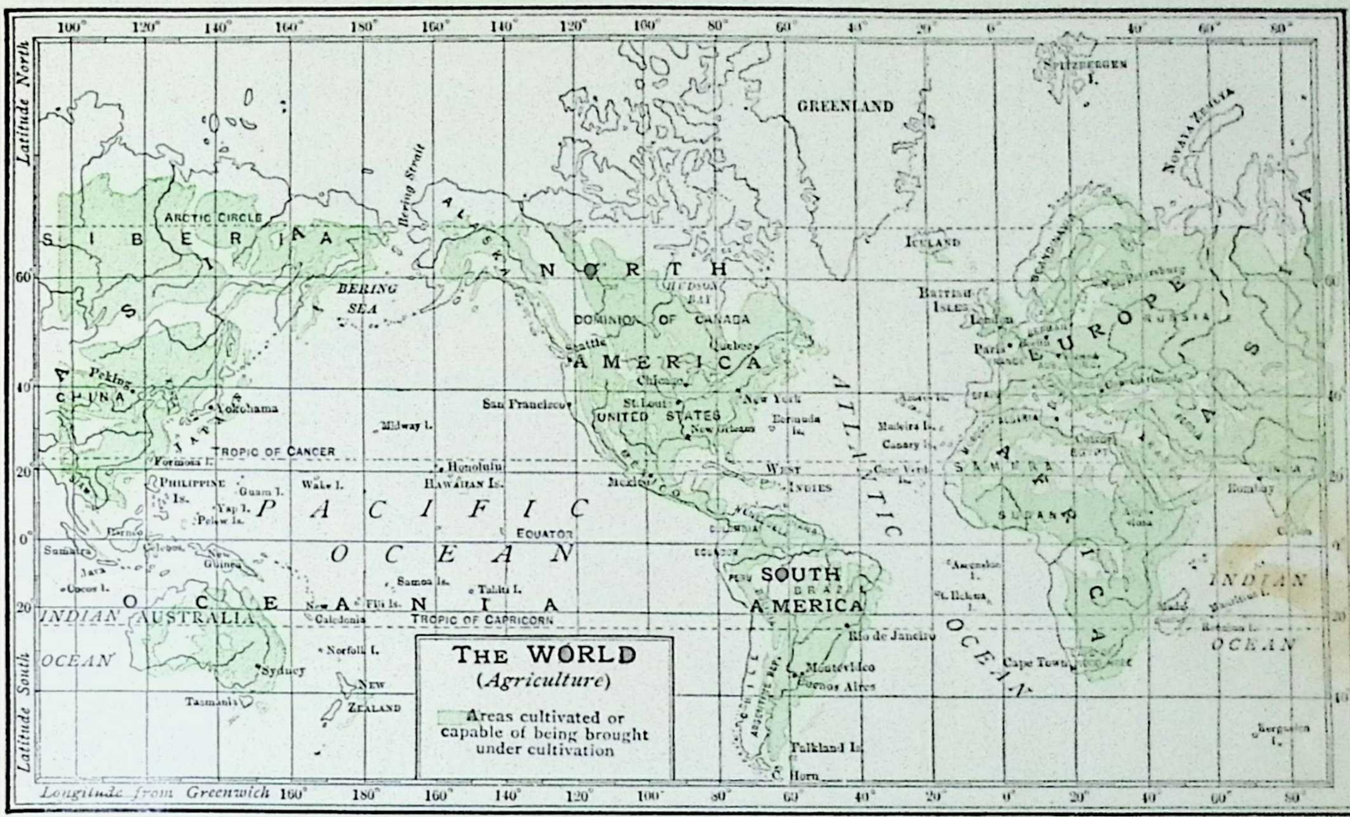

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FIG. 124. *A Map of the World, Showing Areas Suitable for Agriculture.*

number of cloudy days, and the rainfall is nearly the same in amount year after year. In the same way the wind blows from the west more than from the east, and there is more good weather than bad weather. By putting all these things together we can describe the climate of our home region.

Temperature. The most important feature of the climate and of the weather, and the one we talk about the most, is the *temperature*, that is, the heat or cold of a region. If it is too cold for comfort we try to warm our houses, and if it is too hot we shut out the sun's heat as much as possible and do everything we can to keep cool.

The Cold Caps. According to the temperature, we divide the world into five belts or regions known as *Heat Belts*. (See Fig. 125.) About the North Pole and extending about one-third of the way to the equator is the *North Cold Cap*, in which the climate is so cold that no crops can be grown. Within the region of the North Cold Cap are a large part of northeastern North America, including the large island of Greenland, nearly the whole of Iceland, and the very northern coast of Eurasia.

About the South Pole is the *South Cold Cap*, which extends nearly one-half of the way to the equator. The only continent that extends into the South Cold Cap is South America, the very tip end of which is in this cold region.

In the center of the Cold Caps there are enormous areas of snow and ice which never disappear. Such masses of ice are known as *glaciers*. They are formed by the rain or snow which falls there. As the snow lies on the ground it is pressed down by the weight of the snow on top, until finally most of the air in the snow is pressed out. Then blue ice is formed. Parts of these glaciers often break off when they reach the ocean, and the great blocks formed by the breaking float away as *icebergs*. These icebergs are often found in our oceans in the spring, but

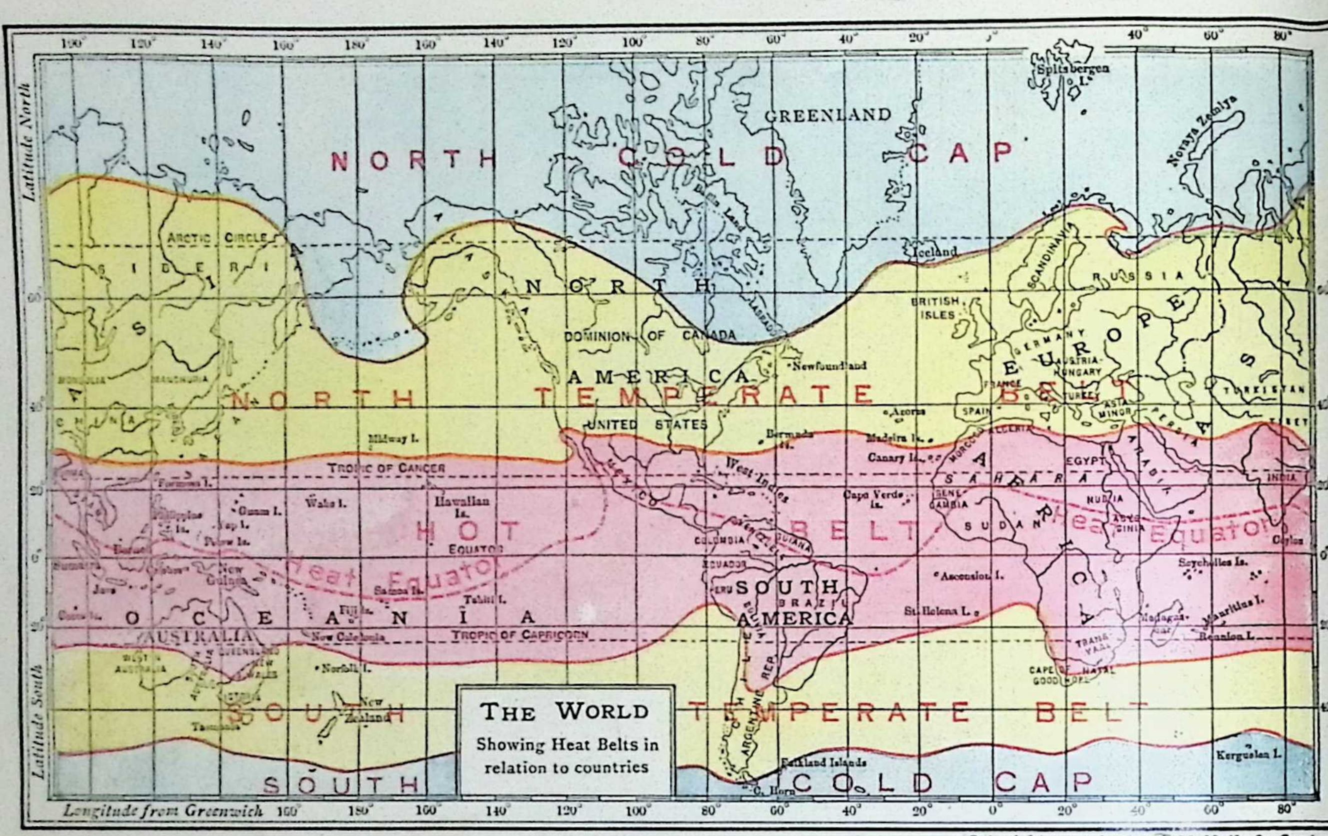

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FIG. 125. *A Map of the World, Showing the Location of the Heat Belts. Compare with a Globe.*

they do not last long because they are carried southward and are melted by the warmer waters through which they float.

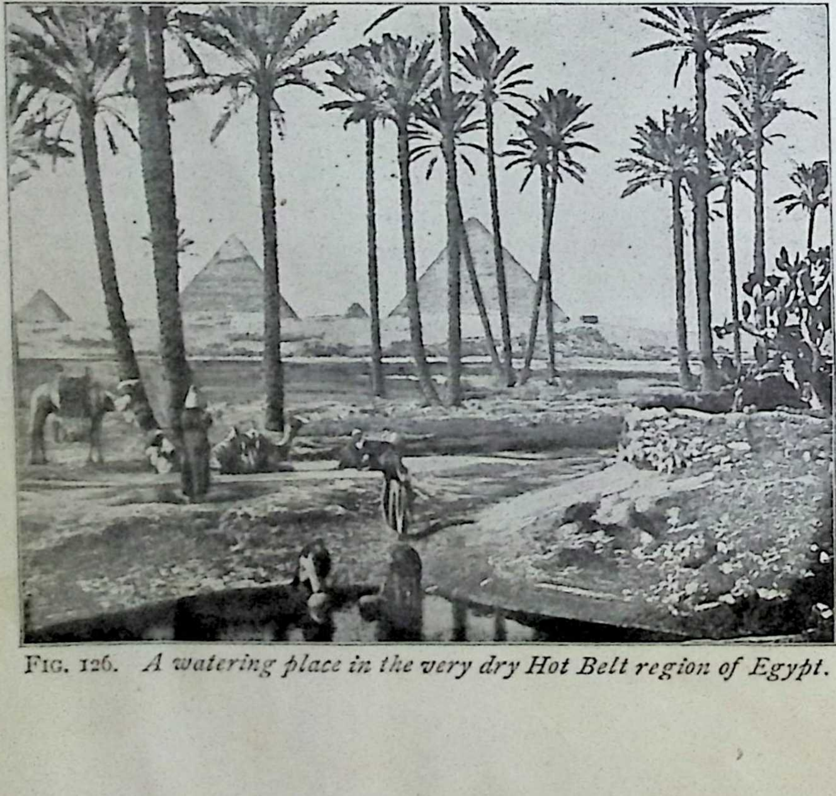

FIG. 126. *A watering place in the very dry Hot Belt region of Egypt.*

The Hot Belt. About the equator there is a region that is always very hot, where the nights, as a rule, bring no relief from the weakening heat of the day, and in a large part of which the rainfall during the year is very heavy. This region is known as the *Hot Belt*.

The Hot Belt is found on both sides of the equator and extends a little more than one-fourth of the way toward the South Pole and about one-third of the way to the North Pole. In it are found the following regions: Mexico, Central America, the West Indies, the southern part of the United States, nearly two-thirds of South America, all of Africa except the northern and the southern tip, the southern countries of

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Asia, the northern two-thirds of Australia, and the islands between Asia and Australia. In certain parts of the Hot Belt, as in Northern Africa and Australia, it is very dry. Trees and water are very rare. (See Fig. 126.)

The Temperate Belts. Between the Hot Belt and the South Cold Cap is the *South Temperate Belt*, in which lie a small part of South America, the southern tip of Africa, and the southern third of Australia. The region between the Hot Belt and North Cold Cap is the *North Temperate Belt*, in which lies the larger part of the United States. The North Temperate Belt contains about two-thirds of North America, nearly all of Europe, and the larger part of Asia.

Nearly one-half of the land of the world is thus in the North Temperate Belt, and in this belt are the largest and most progressive nations of the world. The temperate belts have cold winters and warm summers, and the summers are long enough for crops to ripen. In the winter the trees and plants cease growing, many of the animals get thick coats of fur or go to sleep for several months, and many of the birds fly away to warmer regions.

Causes of Heat Belts. It is very evident from what we have learned about the Heat Belts that the heat which comes to the earth at any season is not evenly distributed over the earth. We cannot explain fully in this book why this is so, but we can give the more important reasons.

The earth is heated by the *Sun*, which is a very large, very bright, and very hot ball of matter at an enormous distance away. It sends its light and heat out in every direction, and only a very small part of this light and heat reaches the earth.

If we take a large electric arc lamp to represent the sun, we can see how the light and heat go out in all directions from a warm and bright globe. Though the earth gets a very small part of the sun's heat, it depends upon the sun almost entirely for its variations in temperature.

Climate and Altitude. As we have seen from this brief glimpse at the Heat Belts, the climate continually grows colder, as a rule, as one passes north or south from the equator toward the Cold Caps. It is possible, however, to get the same changes in climate by going up a mountain in any part of the world. The upper air is always colder than the lower air, and the greatest highlands, even in the Hot Belt, reach into the region of perpetual snow.

People take advantage of this fact when they go to the mountains in the summer to keep cool, or when they drive their cattle from the mountains down into the lower lands in the winter to escape the severe mountain weather. The line of perpetual snow is higher up the mountains in the Hot Belt than it is in the Temperate Belts, because it is hotter in the lowlands and one has to rise higher to reach air that is freezing cold.

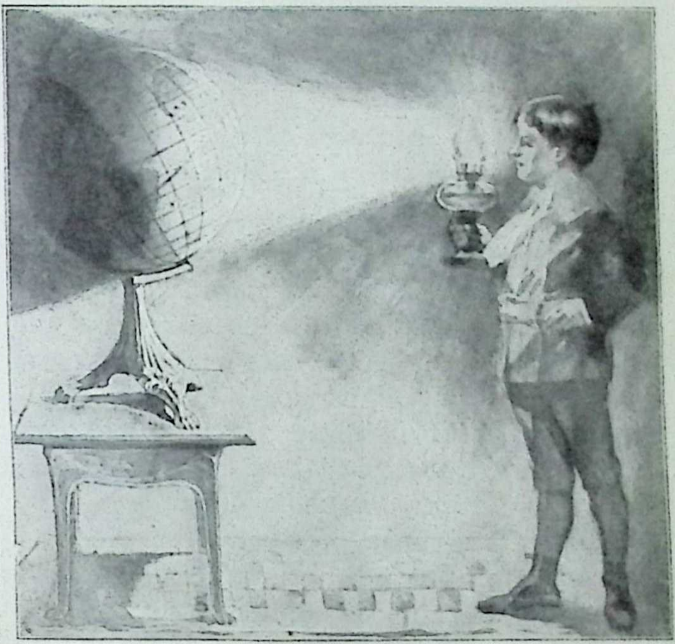

FIG. 127. *How we get daylight. The globe represents the earth, the lamp the sun.*

How We Get Daylight. A lighted lamp held in front of a schoolroom globe in a dark room will easily show us how the light and heat from the sun are scattered over a globe like our earth. (See Fig. 127.)

We can see that one-half of the globe is lighted, while the other half is not, and that the portion of the dark side nearest the light side is only partly dark, or, as we say, in *twilight*.

The globe cuts off the light from the region behind it; that is, the globe casts a shadow. This is just as true for the earth, and in the daytime we are in sunlight, in the night we are in the shadow, and just before sunrise and just after sunset we are in *twilight*.

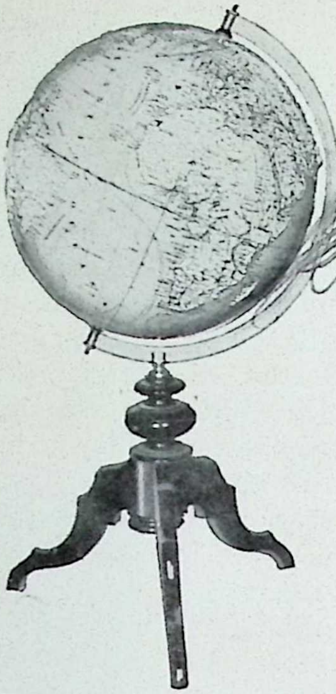
FIG. 128. *A mounted globe, showing the position in which the earth rotates.*

Rotation of the Earth. How can we be first on the side of the earth toward the sun and then later on the other side, with the earth between us and the sun? In just the same way a button on the front of one's coat is on the side toward the fire when one faces the fire, and on the shadow side when one *turns around* to warm his back. The earth turns around every day, and thus the light and heat of the sun are scattered over one part at one time and another part at another time.

The earth turns or *rotates* on the line connecting the north and south poles as a top turns on the line connecting stem and point. (See Fig. 128.) This line through the earth is called the *axis* of the earth.

The Earth's Yearly Journey. Just as a top sometimes circles across the floor, or on a table, as it spins, so the earth also moves or *revolves* around the sun, and once in a year it comes back to its starting point. A top will sometimes spin while its axis is leaning over so that it looks as if it would fall. This is the position the earth rotates in all the time. (See Figs. 128 and 129.)

As the earth moves around the sun, the sun shines directly upon one part of the earth at one time and upon another part at another time, but it always lights up just one-half the earth, as we have seen. As a result of the motion of the earth about the sun, the sun does not seem to be in the same place in the heavens at the different times of the year.

Cause of Winter and Summer. In the winter our part of the earth does not get the sunlight as many hours a day as it does in the summer. The sun does not rise so high in the heavens and does not shine so directly upon us; therefore we do not get as much heat as we do in the summer when the days are longer and the sun rises higher in the sky. While the northern hemisphere is having winter, the southern hemisphere has summer. Six months later, while we are having summer, the southern hemisphere has its winter.

The Equator. In the northern part of the world, as we have already seen, the sun is in the south at noon, and in the southern part it is in the north. There must then be some region between the north and south poles where the sun is directly overhead at noon. The middle of the part of the earth in which the sun is always overhead somewhere is known as the *equator*.

We have seen that the warmest part of the year comes when the sun is highest and when the days are long. Then places which have the sun directly overhead most of the time must get much more warmth than those where the sun shines obliquely. Therefore the regions about the equator are the warmest and it is here that we have the Hot Belt.

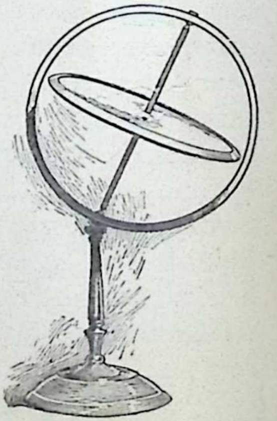
FIG. 129. *A spinning top. The circular top when revolving and placed on the stand may take the position shown, which is the same as the position taken by the earth.*

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The Seasons. Twice a year, in March and September, the sun shines on the earth from pole to pole and is directly overhead at the equator. In spring the sun is rising higher at noon each day, and in autumn it is getting lower each day. In the spring the ground warms up, the farmers plant their seed, the birds and insects appear again, and everything is full of life. In the autumn the crops are harvested, many of the birds disappear, the squirrels store up food for winter, the leaves fall, the cattle grow thicker coats, and everything prepares for winter. Spring with us begins in March, but the Southern Hemisphere is having autumn in March, just as they have winter when we have summer and summer when we have winter

In the Hot Belt the temperature changes so little during the year that the seasons are not called *spring*, *summer*, *autumn*, and *winter*, as they are in the Temperate Belts. There are times in the Hot Belt when the plants grow luxuriantly, and others when they grow slowly. The difference is due to the presence or absence of rain, and hence the seasons are called the *rainy season* and the *dry season*.

Summary. We have now seen how the different countries of the world exchange their products with one another. We have also learned that no one is able to live alone, but that each one of us has things every day to eat or to wear that have come from a long distance, perhaps from another country and another heat belt.

Let us now return to our own continent, which, of course, is the most interesting and important to us. Let us find out about the people and their work, about the products of the country, and where and how they are secured.

Maps. When we study a continent or a country carefully, we need a map large enough to show more things than can be shown on a globe. A map of any part of the rld is, of course, really a piece of a globe drawn on a large scale so as to show more things. The globe has a curved surface and a map is flat. If we cut the skin of an orange in several pieces, cutting each time from stem end to bloom end, which represent the north and south poles of the earth, the lines between the pieces would all run north and south. If we should then try to flatten out one of the pieces to make it flat like a map, it would break apart. Therefore it is hard to express the globe surface on a map.

There are, however, many ways of showing a globe surface as a map, and several are used in this book. In studying these maps we should remember that they represent parts of the curved earth. The continuous black lines extending up and down the page, or nearly so, all run north and south like the edges of the orange peel, and the same kind of lines extending across the page run east and west. Thus on maps of so large an area as that of North America, the top of the map is not exactly north and the sides are not exactly east and west. The dark lines will, however, tell us the direction, and thus we can easily study direction on the maps.

~~Suggestions for Review~~

~~(1) Look at a~~ globe and see why we say ~~cold *cap*~~ rather than cold belt. (2) Describe the position of the axis of a globe. (3) Compare the position of the leaning top with that of a globe. (4) Move a tilted globe about a light and describe where twilight is found. (5) At what time of day is your shadow the shortest? (6) Which way does your shadow point at noon? At sunset? In early morning? (7) Find out what we mean by the equinox, which is the name for the time in March and September when the sun is over the equator. (8) Describe as many things as you can that occur in spring. In autumn. (9) Why do most schools have a long vacation in summer? (10) At what time of year do we have thunder showers? (11) Why are the streams often in flood in the spring? (12) How does the landscape in winter compare with that in the summer?

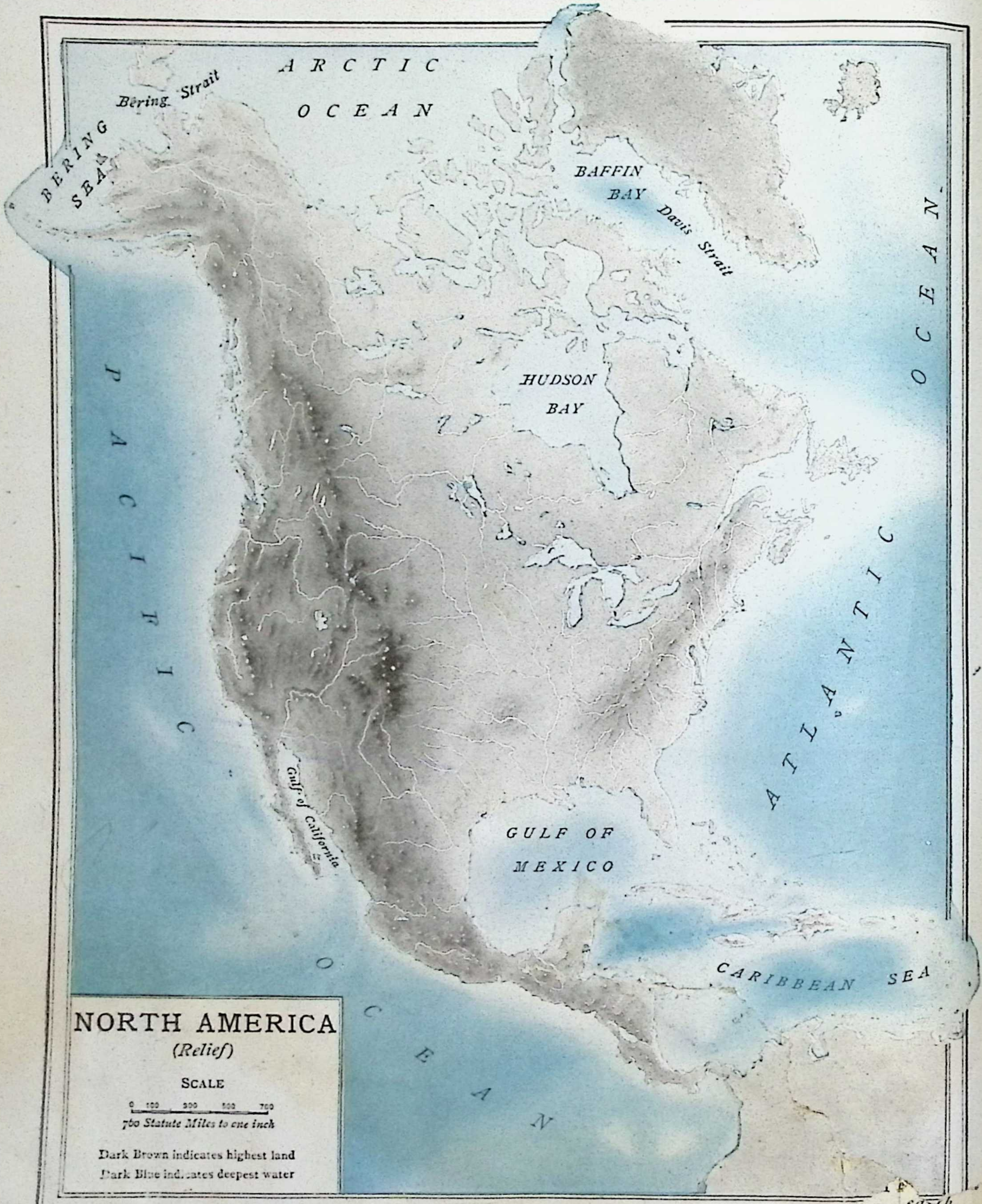

FIG. 130.

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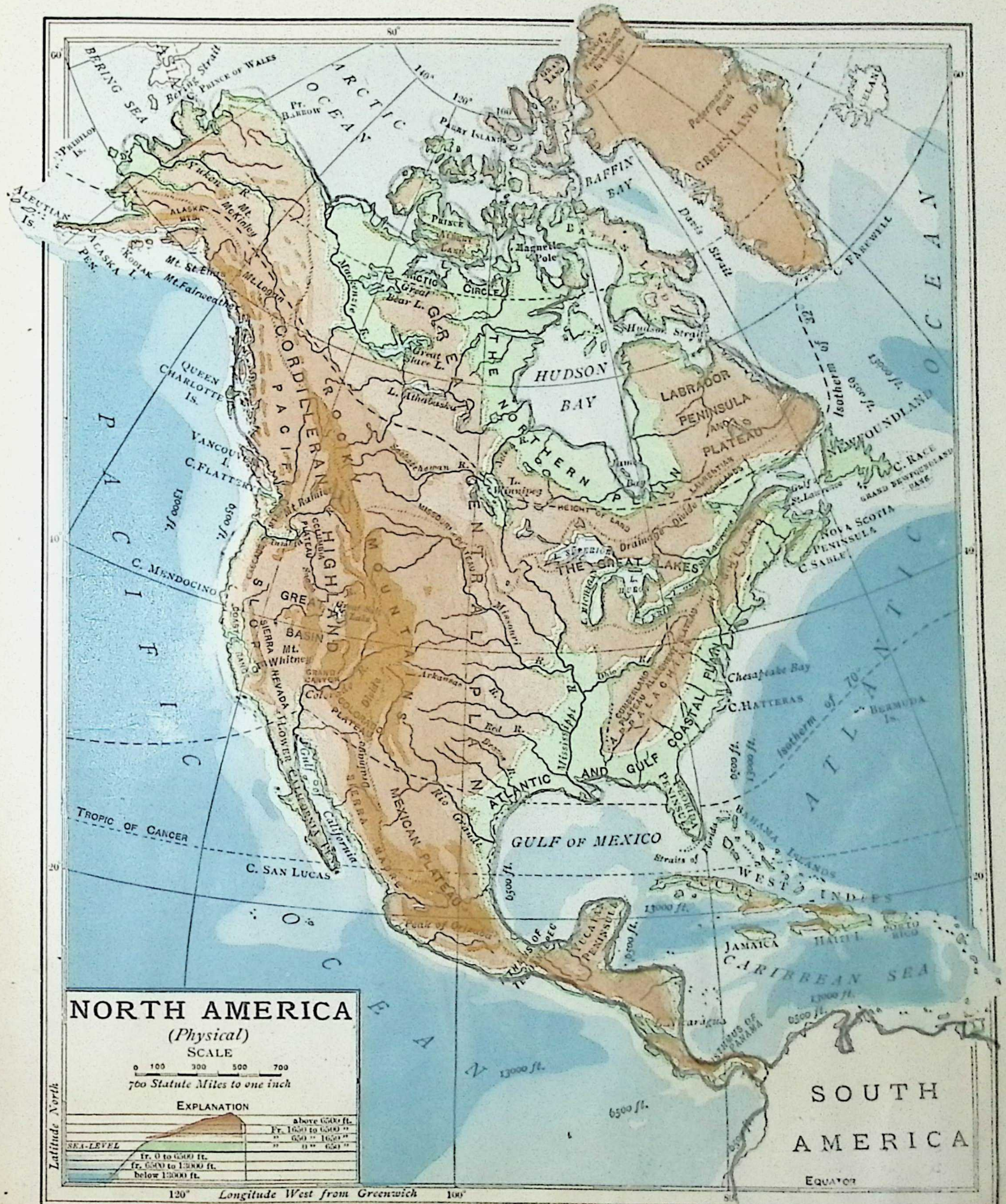

Revised, 1906, 1907

FIG. 131.

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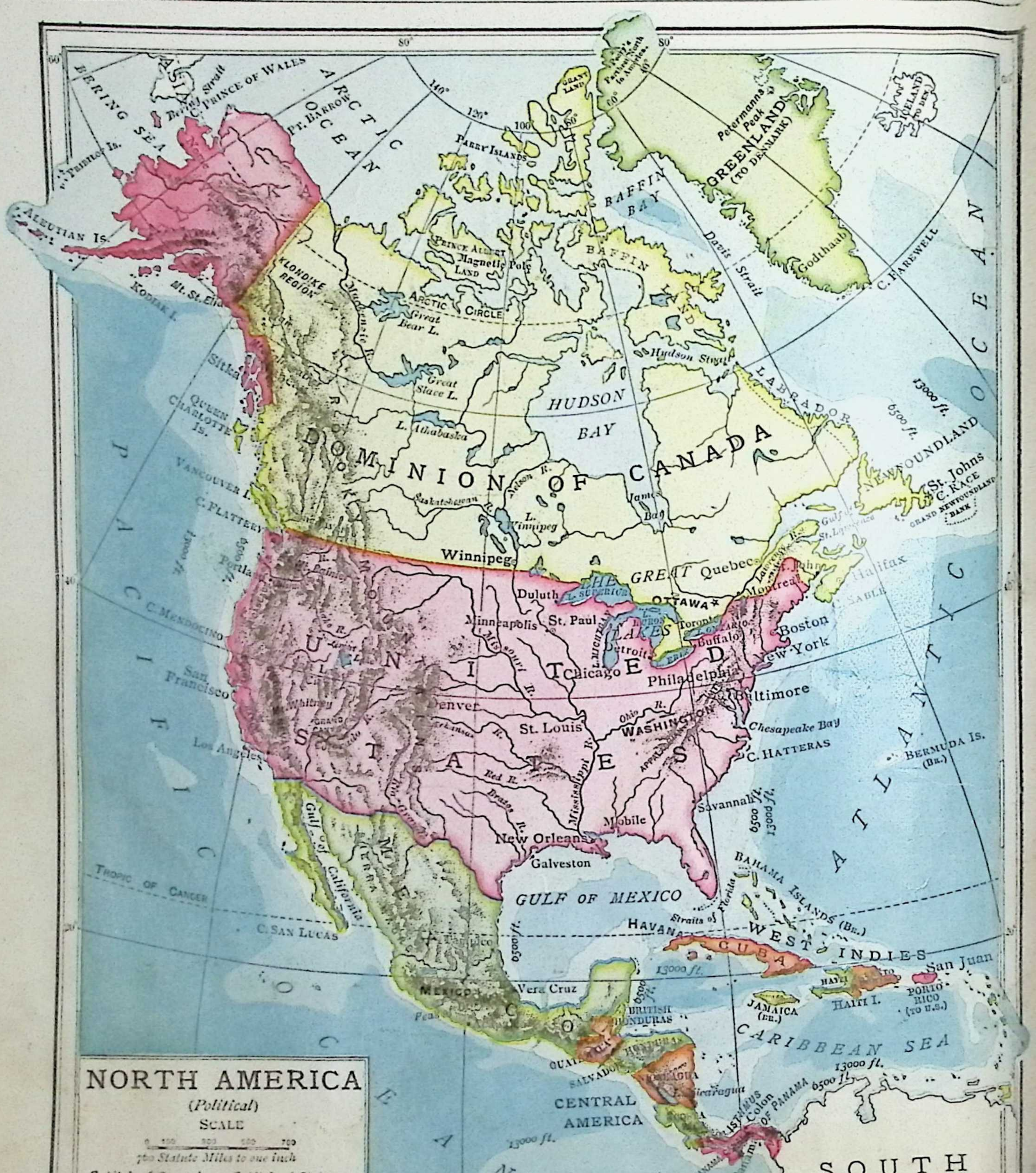

Revised, 1907. FIG. 132.

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NORTH AMERICA

XX. *OUR CONTINENT*

Size and Position. Our own continent is *third in size* in the world, being about *one-half* as large as Asia and *two-thirds* as large as Africa. It is separated from the progressive countries of western Europe by a broad ocean, and hence was for a very long time unknown to the people of the Old World.

For more than three hundred years after North America was discovered, the passage across the Atlantic was long and tedious, because all travel had to be by sailing vessels. Now swift steamships have brought North America nearer to Europe than to any other continent of the Eastern Hemisphere.

Climate. North America has a very varied climate, because it lies in so many heat belts. The northern portion is in the Cold Cap and is occupied only by wandering Indians and Eskimos, who live chiefly by hunting and fishing. This cold region, for the most part, is included in the *Dominion of Canada*, which belongs to the United Kingdom in Europe.

The southern part of the Dominion of Canada, and all but the extreme southern part of the United States, are in the North Temperate Belt. In this belt the climate is favorable for all the important occupations, and people can live without suffering from heat or cold. In such a climate people can work out of doors the year round, and hence can accomplish more than people who can only work at certain seasons.

The countries of the southern part of the continent in the Hot Belt are the extreme southern portion of the United States, Mexico, Central America, and the West Indies. Central America, though called one country, is really made up of several countries, which we shall study more fully later.

Rainfall. The rainfall in any heat belt is not evenly distributed, and there are certain regions that are colder than others. This is especially true where a region is made up of highlands and lowlands or mountain ranges and valleys.

Mountains are generally colder than lower lands in the same region, and the side of a mountain range over which the wind blows much of the time (the *windward* side) receives more rainfall than the opposite or *leeward* side. Hence we cannot understand the *climate* of a country unless we know how the highlands and lowlands, the plains and mountains are distributed.

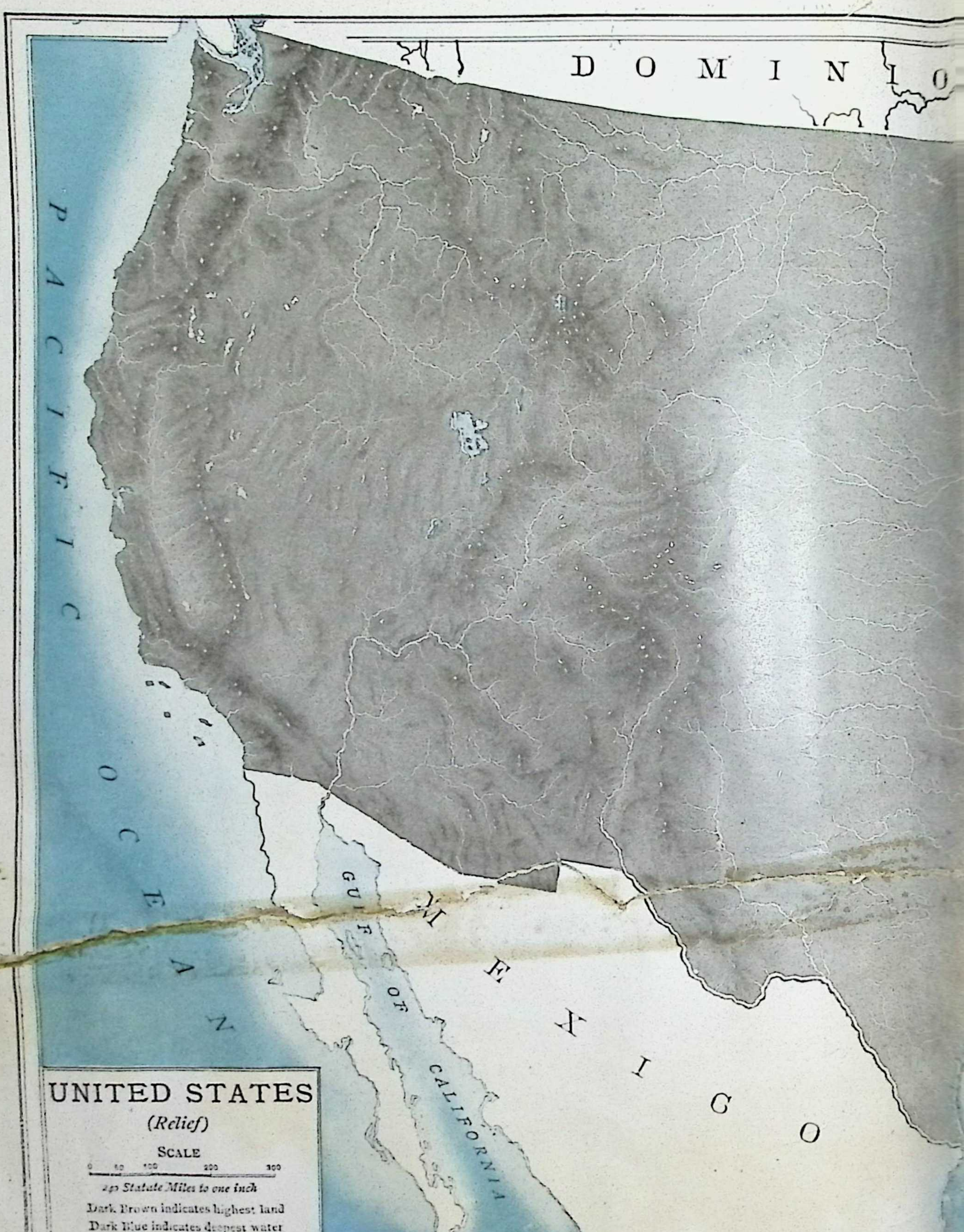
Surface of Our Continent. A study of the physical map of North America will show two highlands; the longer, higher, and broader along the Pacific coast, and the shorter, lower, and narrower along the Atlantic coast. (See Fig. 131.) The *western* highland is called the *Cordilleran Highland* and is made up of many mountain ranges. The eastern mountains of this highland are known as the *Rocky Mountains*, and sometimes the name Rocky Mountains is used instead of the name Cordilleran Highland.

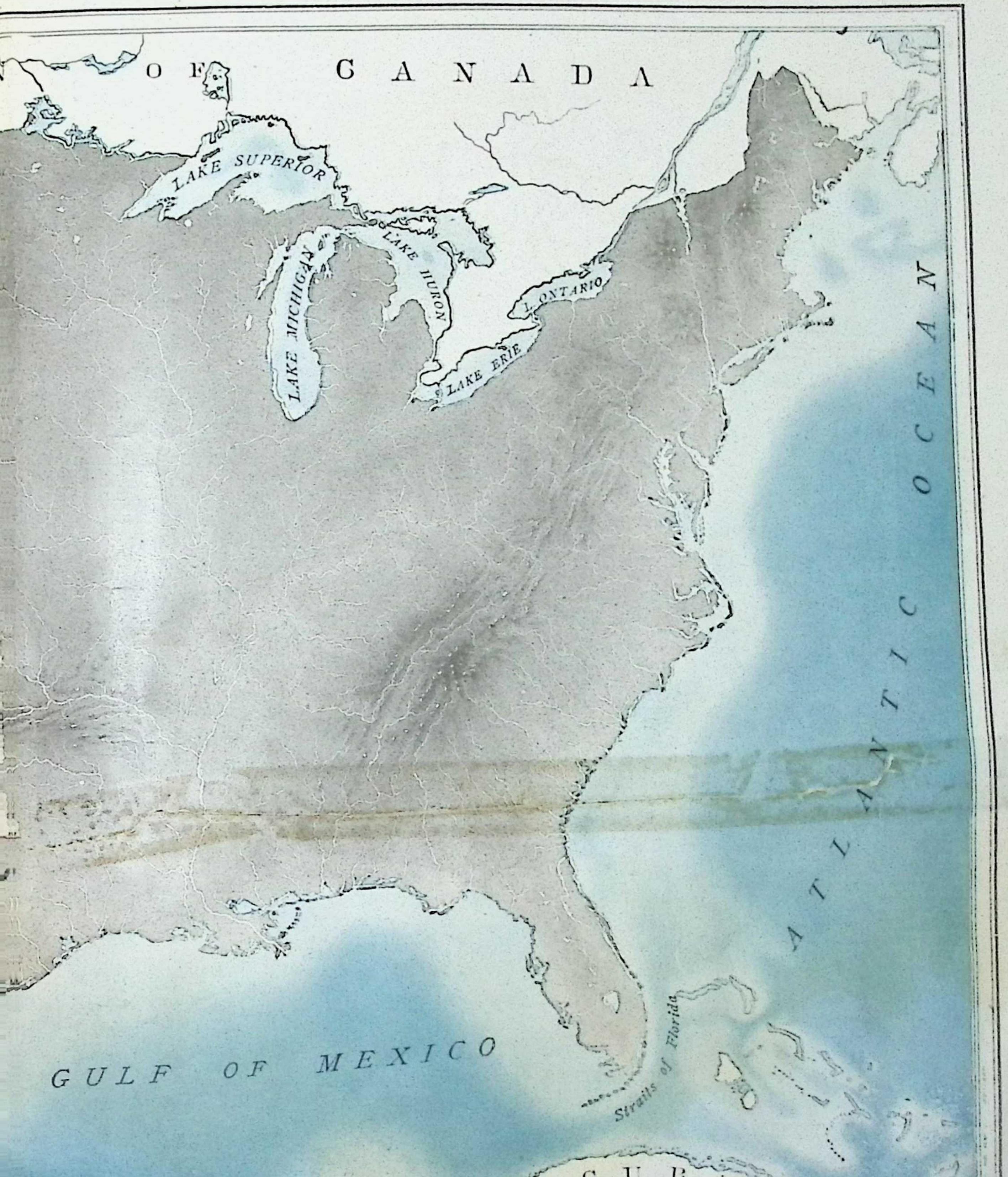
The *eastern* highland is called the *Appalachian Highland* or *Appalachian Mountains*, and is made up of many mountain ranges with separate names.

Between these two great highlands and extending across the United States and Canada is a plain, often called the *Great Central Plain*. It contains a slight elevation of land just north of the Great Lakes, running east and west in Canada, and dividing the waters flowing to the north from those flowing to the Mississippi or the Great Lakes.

Along the Atlantic coast is a narrow fertile plain that is densely populated, but on the Pacific coast the mountains are close to the ocean and fewer people can live near it.

Drainage. The great highlands are, on the whole, divides between the great rivers, but in some cases the rivers flow through the higher parts of the highlands in valleys which they have cut for themselves. Good


DOMINIO
PACIFIC OCEAN
GULF OF CALIFORNIA
MEXICO
UNITED STATES
(Relief)
SCALE
0 50 100 200 300
240 Statute Miles to one inch
Dark Brown indicates highest land
Dark Blue indicates deepest water



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illustrations of such rivers are the Hudson, Delaware, Susquehanna, and Potomac, which flow out from the Appalachian Highland, as does the Columbia from the Cordilleran Highland.

The rivers flowing westward from the Cordilleran Highland, and eastward from the Appalachian Highland, are mostly short because the highlands are close to the ocean. The rivers flowing toward each other down the long interior slopes of the greater highlands mostly join in the Great Central Plain to form the greatest river system of the country, that of the *Mississippi.* The largest tributary of the Mississippi is the *Missouri,* and if we consider these as one river, the Missouri-Mississippi is the *longest river in the world.*

From the divide north of the Great Lakes is a continuous slope down which the rivers flow toward the Arctic Ocean. As these rivers flow from a warmer region into a very much colder region, their headwaters thaw out in the spring before the lower portions. As a result these cold, almost uninhabitable regions have great floods in the early summer, and travel there is almost impossible except for a few weeks in the year.

Importance of Rivers to Commerce. Many of the large rivers of North America, especially those in the Temperate Belt, are deep and broad, and are therefore very important routes of commerce. The early explorers of North America followed the rivers and the Great Lakes because they were the easiest routes into the interior. Before the white people came the Indians used the rivers for travel, and thus the river systems have always been of very great importance.

In order to make the water routes even more serviceable to commerce, *canals* have been built in many places, connecting one large river with another, or along the valley of a stream which was too shallow or rapid for boats. Some of these canals, as, for instance, the "Soo" canal connecting Lake Superior with Lake Huron, are very important because they have made it possible to transport goods very far into the continent without carrying them across the land at all.

Suggestions for Review

(1) Find out what was the first part of North America to be visited by white men. (2) Why is hunting important in the Cold Cap? (3) What are the animals hunted for? (4) Find out about the Hudson Bay Company. (5) From the appearance of a tree or a house after a rain find out the direction of the wind during the storm. (6) Where is it cooler on a warm day, on the ground or on the roof of a house? Why? (7) How many different mountain ranges can you find in the Cordilleran Highland? (8) Find some rivers flowing into the Atlantic that do not flow across the Appalachian Highland. (9) What rivers flow from the interior of North America to the Pacific? (10) Trace out a divide between two large rivers. (11) Find three rivers flowing to the north in the Dominion of Canada. (12) Find three important canals. (13) What do they connect?

XXI. THE UNITED STATES

Our Own Country. Our own country, the United States (see Figs. 133, 134, and 141), stretches across the middle of the great continent of North America. The country is so long east and west that it takes about four days to cross it in the fastest railway trains; it is so broad north and south that it takes about a day and a half to cross it in that direction; it is so large that it has room for very great numbers of people, all of whom can find a way of earning their food and clothing by some kind of work.

The southern part of the country lies in the Hot Belt and the northern part is in the northern part of the Temperate Belt. Therefore there are many kinds of climate within the United States and it is possible to raise a great variety of products. The area which can be used for agriculture is so large that

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much more food is produced than is needed at home.

The Early History of the United States. The low plain east of the Appalachian Highland was the first part of the present United States to be settled by white men, because the people from Europe who first discovered and occupied America came across the Atlantic Ocean until they reached our eastern coast. They made their homes in the best places they could find near the coast. Later settlers spread farther inland and small towns grew up rapidly.

In less than three hundred years after the country was first discovered *thirteen colonies* had been settled along the Atlantic coast, all belonging to England, which is one of the most important countries of Europe. In 1776 these colonies began the War of the Revolution to become a new nation, and at the close of the war *the United States was formed* with the thirteen colonies as the *first thirteen states.*

The United States To-day. From this small beginning the United States has grown until now there are forty-six states and four territories. *Territories* are subdivisions similar to states but more dependent in government upon the President and Congress. One of these territories is *Alaska*, in the northwestern part of North America, and northwest of Canada. Another territory is *Hawaii*, a group of islands in the Pacific Ocean. These are the only territories not included within the area shown on the map of North America as the United States.

The United States also owns many large islands in different parts of the world, including *Porto Rico* in the West Indies and the *Philippines* in the Pacific.

The thirteen red and white stripes in our flag tell us how many states there were at the close of the Revolution, and the number of stars in the corner of the flag tells us how many states there are now.

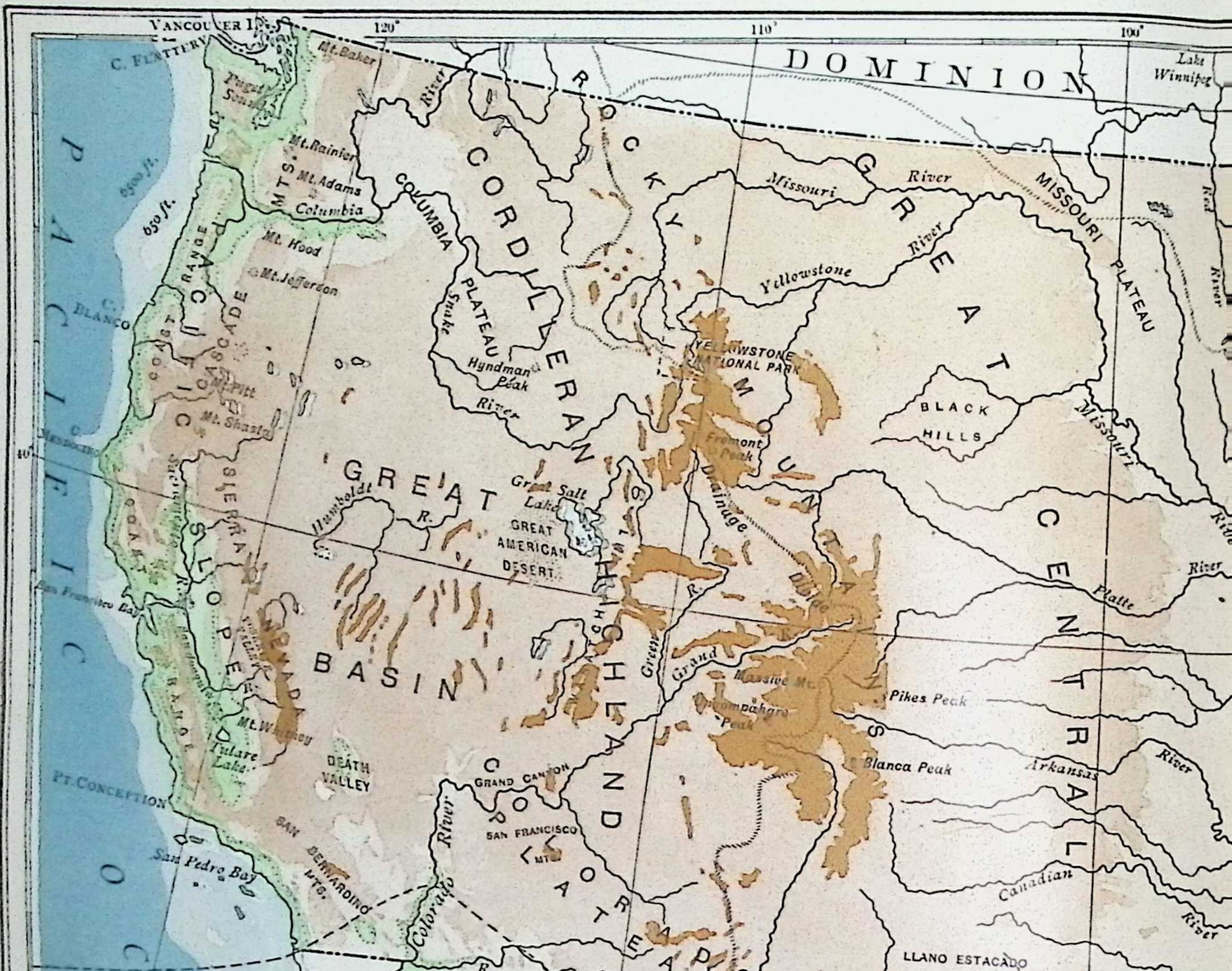
Development and Distribution of Industries. When people lived mostly in small villages or hamlets, as they did in early times in the United States, every family produced most of the food and clothing that was needed at home, and few things had to be bought from others. The farmers raised grain, vegetables, and sheep or hogs for food. The women dried the fruits, made the butter from the milk, cured the meat of the hogs for winter use, and made clothing from the wool of the sheep. Then one could see most of the important industries, like agriculture, grazing, and manufacturing, in any small village and sometimes about one house.

As the country has developed, certain regions have been found better for agriculture, or for grazing (see Figs. 164 and 171), or for manufacturing and other occupations. The northeastern United States is a manufacturing region (see Fig. 136); the southern and central states are devoted largely to agriculture; and the states just east of the Rocky Mountains are famous for grazing. The Pacific States are devoted particularly to lumbering, agriculture, and mining. (See Figs. 179 and 189.) This does not mean that only one kind of occupation is carried on in a region, but that the occupation which is followed by the largest number of people gives the region its reputation.

As we take up the several groups of states in turn and study about their occupations and products, we shall learn why it is that one region can produce certain things better than others. We shall also see how commerce is carried on, and why some parts of the country are more thickly settled than others. For the sake of convenience we will begin with the most northeastern states, or *New England.*

Suggestions for Review

(1) From the map find out what rivers flow westward from the Rocky Mountains. (2) What ones flow eastward? (3) What were the first colonies to be settled? (4) What was the last state admitted into the Union? (5) From the maps find out where railroads could be built only at great cost.



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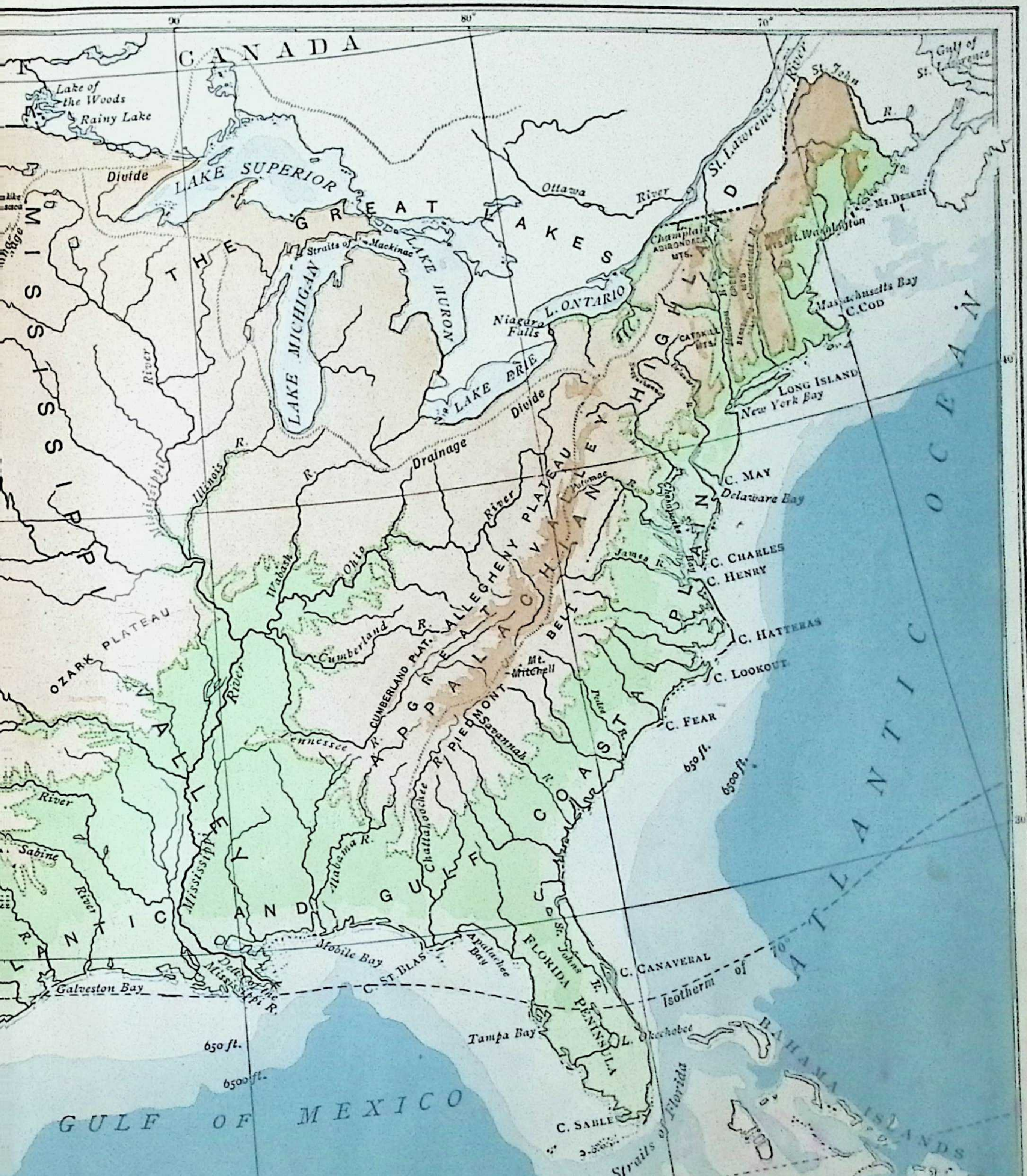

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XXII. NEW ENGLAND

STATE	*Abbreviation*	*Area in sq. miles*	*Population 1900*	*Chief City*	*Population 1900*	*Capital*
Maine	Me.	33,040	694,466	Portland	50,145	Augusta
New Hampshire	N. H.	9,341	411,588	Manchester	56,987	Concord
Vermont	Vt.	9,564	343,641	Burlington	18,640	Montpelier
Massachusetts	Mass.	8,266	2,805,346	Boston	560,892	Boston
Rhode Island	R. I.	1,248	428,556	Providence	175,597	Providence
Connecticut	Conn.	4,965	908,420	New Haven	108,027	Hartford

FIG. 135. *Harvesting corn on a New England farm.*

New England was one of the first parts of the present United States to be settled by white people who crossed the Atlantic. The settlers came largely from England and reached the coast of Massachusetts in 1620. New England is made up of six small states, which, all put together, are only about *one-fourth as large as Texas*, the largest state in the United States.

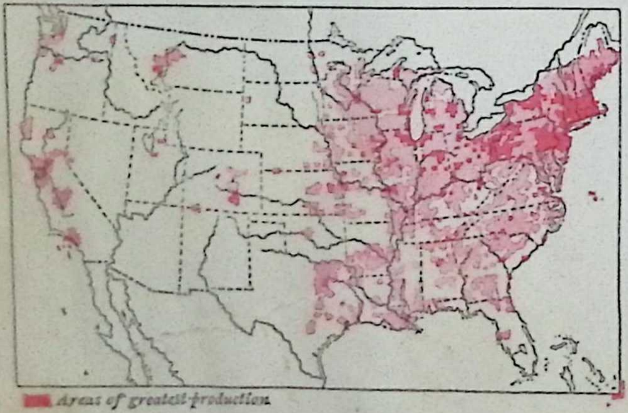

FIG. 136. *The principal manufacturing areas of the United States.*

Surface and Drainage. The whole region is rugged, with lowlands only along the river valleys and near the coast. A large part of New England is an upland in which there are many narrow and winding river valleys.

The higher parts of the upland are mountains, of which the most important are the *Green Mountains* in Vermont and the *White Mountains* in New Hampshire. The White Mountains contain the highest elevations east of the Mississippi, with the exception of Mount Mitchell in North Carolina.

The upland is largely covered with forests (see Fig. 142), and for this reason we find *lumbering* important.

Agriculture and *manufacturing* are most successful in the lowlands for many reasons.

FIG. 137. *A Massachusetts farm. Gathering the corn to be stored in the crib, after husking.*

bare headed ladies,

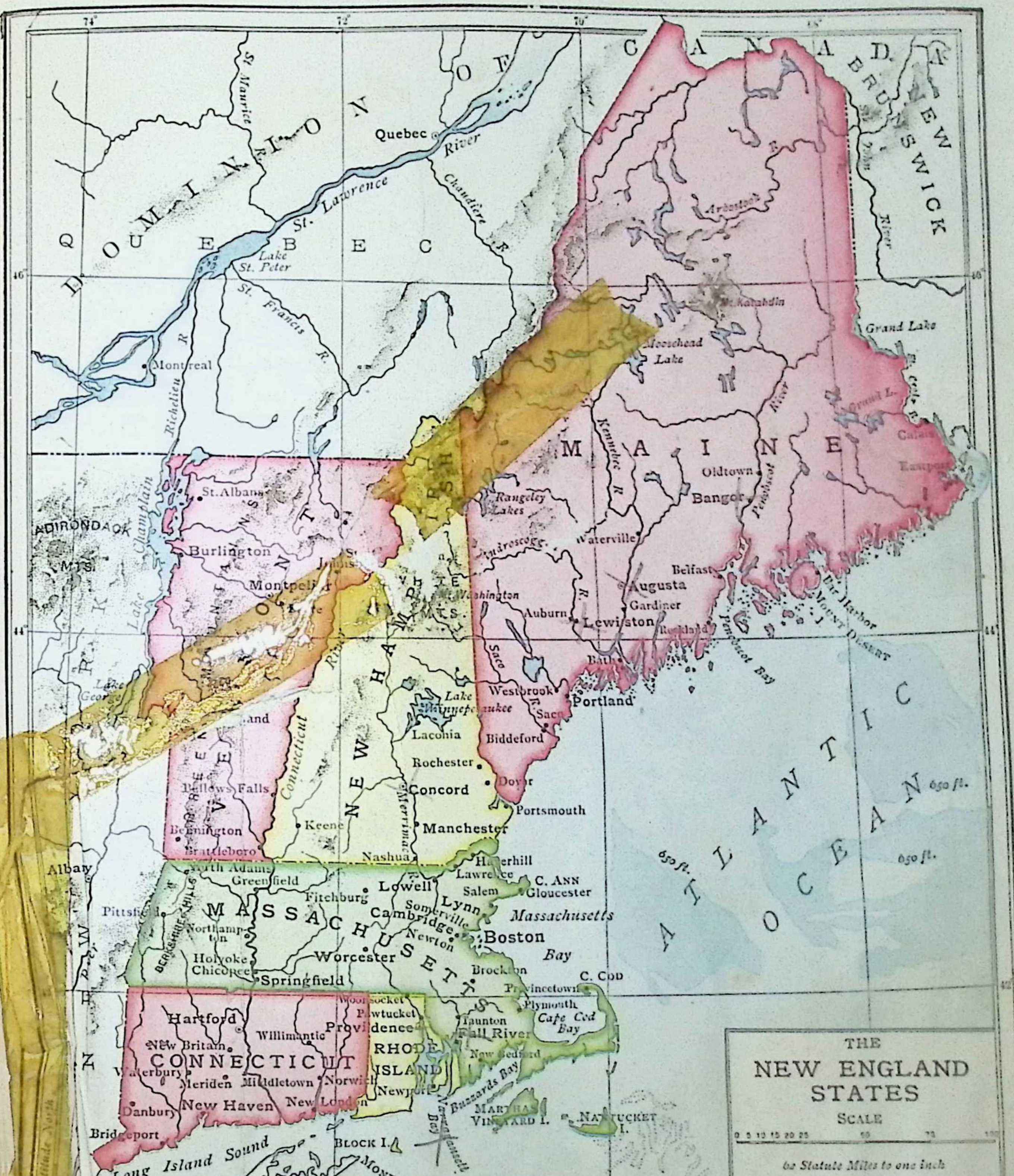

FIG. 143.

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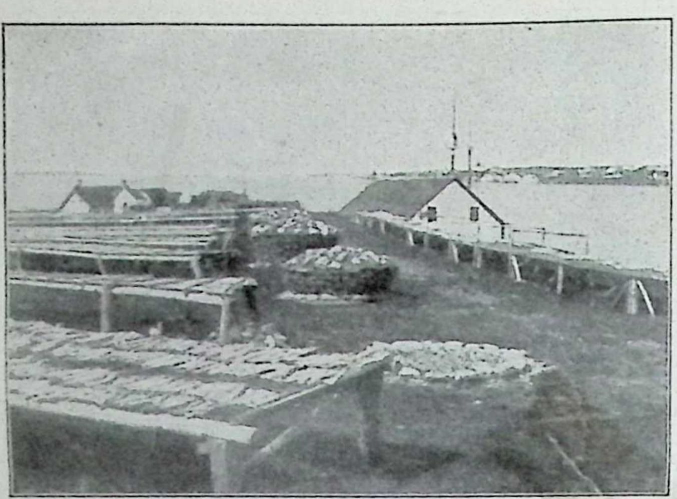

FIG. 144. *A fishing wharf and fish-curing establishment near Calais, Maine.*

cut up into boards or other small lumber, and are made ready for shipping. (See Fig. 77.) *Bangor*, Me., the nearest seaport to the lumbering region, is the leading lumber exporting city in New England

Quarrying. The rocks of New England are very useful and are extensively quarried. The most important rock is *granite*, which is quarried in nearly all the states for use in buildings, for street pavements, or for monuments.

Marble, which is much used for the interior of houses and for monuments, is quarried in Vermont, and *Rutland* is the leading marble center of the United States. The same town also is important for the *slate* quarried near by. Slate is a hard and fine-grained rock which easily splits into thin sheets. These are very valuable for covering house-roofs, and are now much used for school blackboards.

Fishing. Owing to its many good harbors and to its nearness to the regions in the ocean where fish are found, New England carries on a large amount of *deep-sea fishing*. (See Fig. 152.) *Gloucester*, Mass., is the most famous fishing town, and sends out several hundred vessels to the fishing grounds. These are largely on the *Grand Banks* near Newfoundland, and the principal kinds of fish caught are *halibut* and *cod*, which are mostly salted or smoked so that they can be exported to all parts of the world. *Fish-curing* is therefore an important industry at all fishing towns. (See Fig. 144.)

Commerce. As a result of so many different industries and products, New England naturally carries on much commerce with the United States and the rest of the world. Manufactured goods are sent by train to all parts of the United States in exchange for food, coal, iron, and other necessary goods. The foreign and coastwise commerce is also large, and *Boston*, Mass., is the second port in importance in the country. Boston has a large and safe harbor and is easily connected by rail with all the manufacturing towns of New England.

Portland, Me., with a large and beautiful harbor, is the second commercial city of New England. (See Fig. 145.)

Scenery. The seashore (see Fig. 106) and the mountain regions are the coolest parts of New England in summer and contain many summer hotels and summer homes. Those portions of the northern New England states that are not readily reached, and in which there are many good-sized rivers and lakes, are much enjoyed by hunters and campers in the summer and autumn.

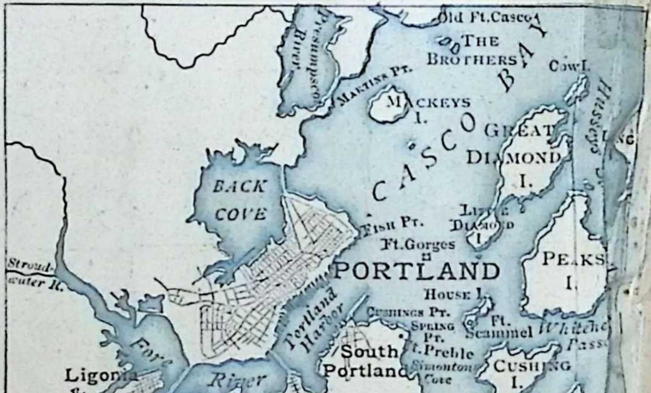

FIG. 145. *A map of Portland harbor and vicinity. This harbor is better protected than any other on the New England coast.*

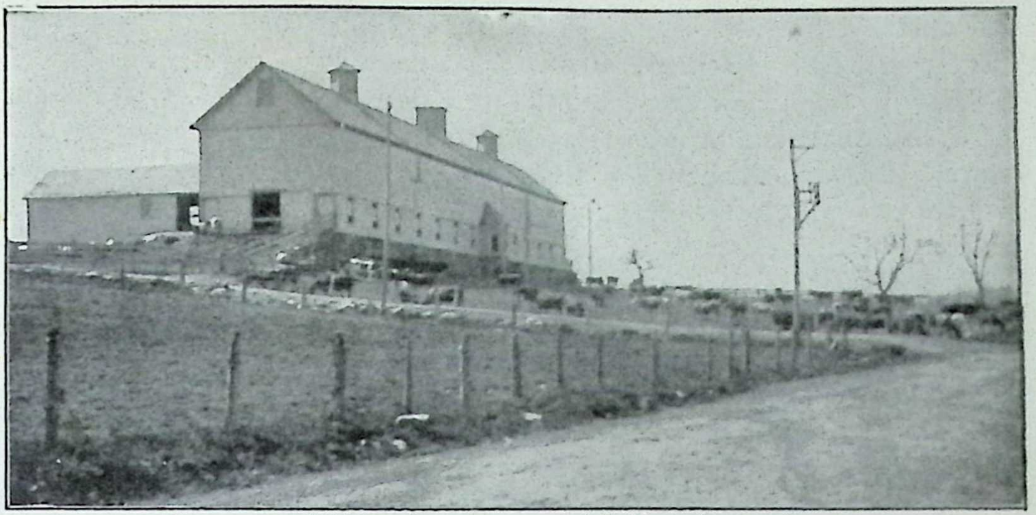

FIG. 149. *Milking barn on a model New Jersey farm.*

Climate. The climate of this group of states is very varied. In the middle of New York state the winters are cold and snow lies on the ground for weeks. In a large part of Florida it rarely freezes and snow is almost unknown. Therefore, many people spend their winters in Florida to avoid the severe cold of the northern states.

The summers are everywhere warm, but of course the southern states are warmer than the northern. The mountain regions are everywhere cool, however, as mountains usually are, and hence contain many summer resorts. The northern coast, particularly close to the large cities, like Philadelphia and New York, is also occupied by summer resorts.

There is sufficient rain throughout the region so that agriculture is carried on with profit Occasionally the crops suffer for water for a few weeks in the middle of the summer, but the dryness does not often cover the whole region at one time.

The crops of the northern states are similar to those of New England because the climate is but little different. As we go south, however, temperature changes, and we find crops that require a warmer climate, and in Florida the most important crops are those that grow only in the Hot Belt. (See Fig. 125.)

Agriculture and Dairying. All the states of this group are important for their *agriculture*, and in the southern states agriculture is the leading occupation. Hence, in the southern states there are very few large cities, and about nine-tenths of the people live in rural communities.

Dairying is important in the highland regions of the northern states. (See Figs. 146, 148, and 149.) The milk is either sent daily to the large cities or made into cheese or butter. Cheese is made in those parts of New York which are too far from a market to allow milk to be delivered daily

Vegetables, *small fruits*, *cereals*, *tobacco*, and *flowers* are the most important agricultural

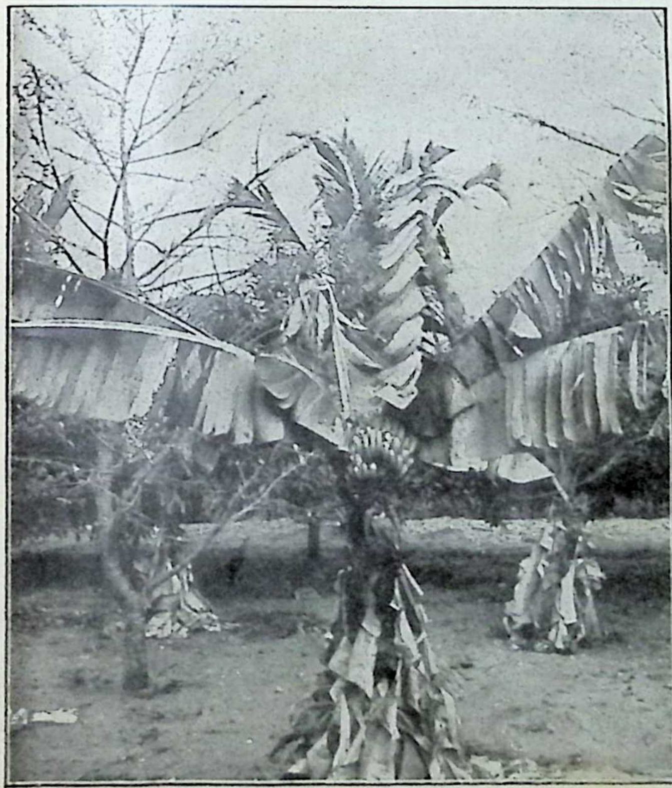

FIG. 150. *A banana plant in Florida. Notice the bunches of fruit at the branching of the leaves.*

products of the northern states, and *cotton, sugar, rice, sweet potatoes, Hot Belt fruits* (see Fig. 150), and *tobacco* are the chief products of the southern states. The southern states raise great quantities of early fruit and vegetables which are largely sent to the northern markets.

New York is the leading state of the Union in producing potatoes, onions, and apples, and the second state in grape raising.

North Carolina and *Virginia* rank next to *Kentucky* in the production of tobacco.

Southern Products. *Georgia* ranks second in the production of cotton. Here, as in the other more important cotton-growing states to the west, the cotton is raised largely on the lowlands of the river valleys or on the plains close to sea level, where the good soil, abundant moisture, and warmth necessary for the growth of the plant are found. (See Figs. 151, 152, and 153.)

Another crop that will not grow in the northern states is *rice.* Rice thrives in the warm, moist lowlands along the coast in portions of *South Carolina*, *Georgia*, and *Florida* While that from *South Carolina* is well known for its superior quality, rice is grown in greater quantities in Gulf States to the west.

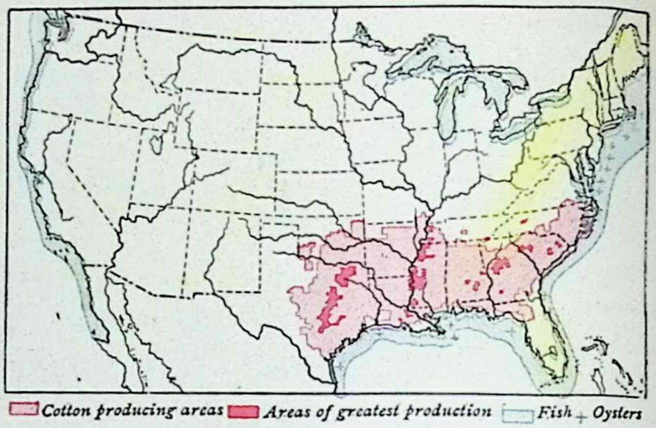

FIG. 152. *A map showing the cotton-producing area and fishing regions of the United States.*

The climate that is favorable for growing these crops is more oppressive to white people than to *negroes.* Hence negroes are largely employed to do the field work. These negroes are descendants of negroes that formerly lived in the Hot Belt of Africa, where the climate is much warmer than that found anywhere in the southern states. The number of negroes has increased rapidly until now they are more numerous than white people in some portions of the southern states.

The most important Hot Belt products of *Florida* are oranges and pineapples. It is the second state in raising oranges, and produces practically all the pineapples raised in the United States.

Mining. Mining is one of the leading occupations of the people of *Pennsylvania*, which is very rich in iron, coal, natural gas, and petroleum. (See Fig. 154.) These minerals are found especially in the plateau region. Other valuable rock products, such as

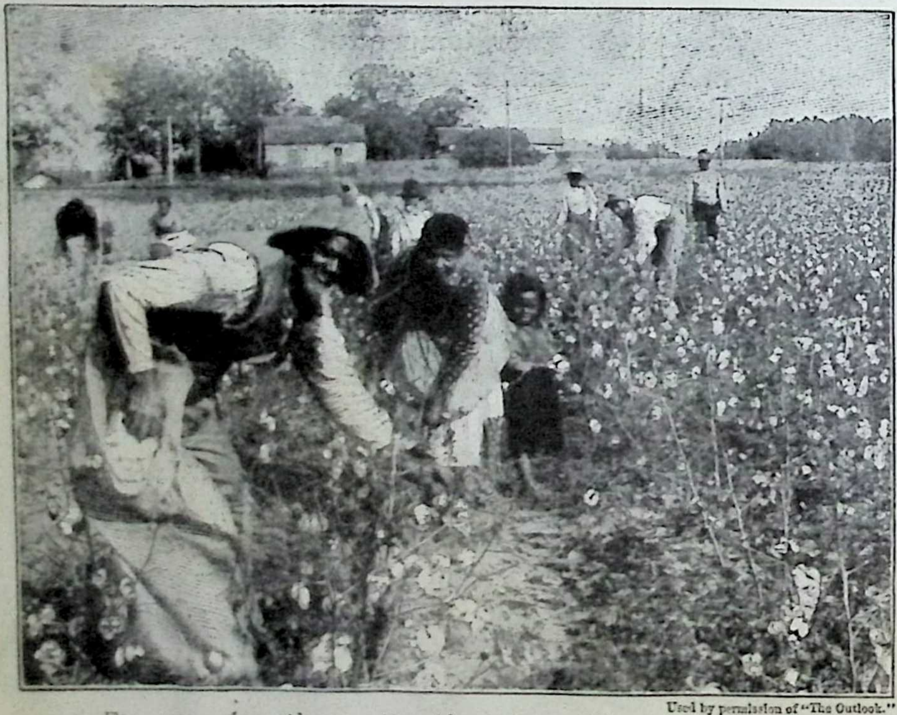

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FIG. 151. *A southern cotton plantation. The second picking.*

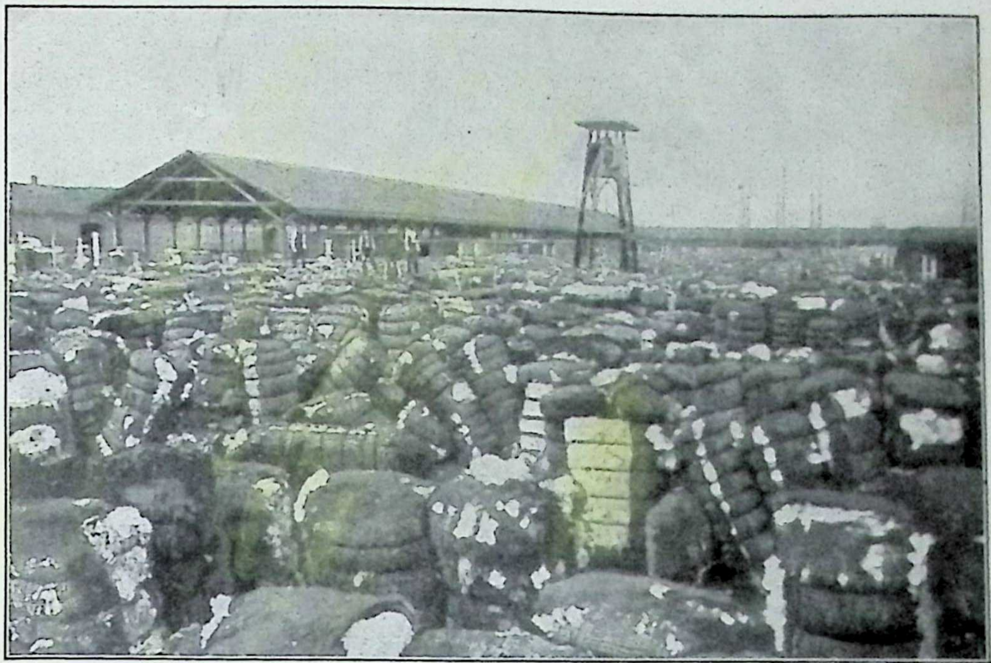

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FIG. 153. *Cotton baled and ready for shipment. A familiar scene at the railway terminus at Savannah, Georgia.*

glass sands and clays for pottery and bricks, are found in the Atlantic plain, and building stones of several kinds are quarried in the mountain and plateau regions. Coal and iron are the chief mineral products, and a large part of the hard or anthracite coal used for fuel comes from eastern Pennsylvania.

The railroads from the mining regions are therefore important routes of commerce, because the country needs an enormous quantity of coal yearly for use as fuel in railway engines, for heating houses, for running the machinery of mills and of steam vessels. The presence of coal and iron near together also makes steel manufacturing of great importance in Pennsylvania. (See Figs. 155 and 156.)

Natural gas and petroleum are secured from wells in Pennsylvania (see Fig. 154) and the states immediately to the west. Petroleum is an important article of commerce, because of its general use for lighting purposes where gas or electricity cannot be produced.

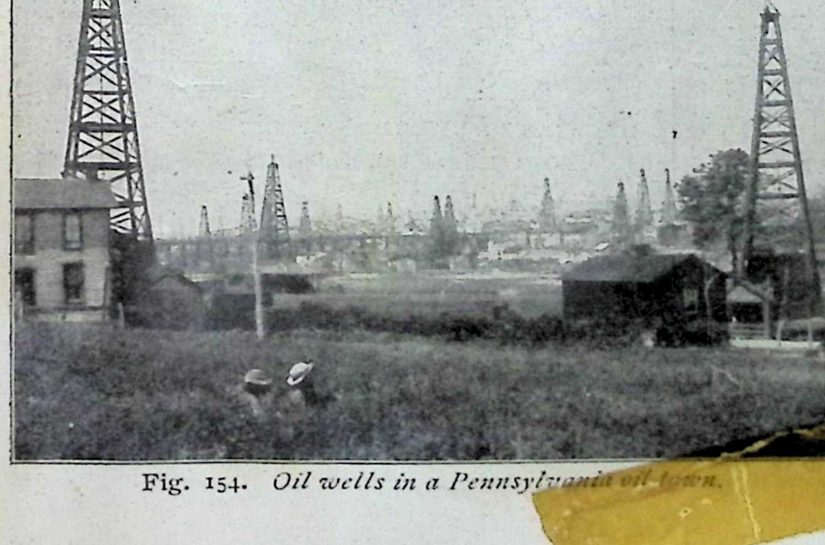

Fig. 154. *Oil wells in a Pennsylvania oil town.*

Minerals are also found in the other states of this region, but mining is not one of the important industries.

Lumbering. In the Adirondacks much lumbering is carried on. The product is mostly made into paper. The great forest areas of this group of states, however, are near the ocean and in the high mountains of the southern states. The forests of the Atlantic plain are largely those of the *long-leaved pine*, whose wood is much harder than that of the pine common in the northern states. Hence the lumber from these trees is sent to other parts of the country in large quantities to be used for interior wood work. The sap is also refined into *turpentine*, which is much used in the manufacture of paints and medicines.

Great areas of the higher mountains of North Carolina, which are largely covered with hardwood forests, are private estates on which the trees are being carefully tended and the forests preserved. The National Government has considered making a large forest reservation in these mountains, so that the forest trees may be preserved for their beauty and for their use in the distant future.

Fishing. Fishing, especially *oyster-fishing* about Chesapeake Bay, is another important industry of this group of states. The drowned valleys of Chesapeake Bay receive a large amount of fresh water from streams, so that the water is only partially salt or *brackish*. Oysters need shallow, warm, brackish water, and Chesapeake Bay furnishes all the conditions required. The oysters are raked from the bottom of the bay in the winter season and are sent to all parts of the country. *Baltimore* is the chief oyster market, and sells both fresh and canned oysters.

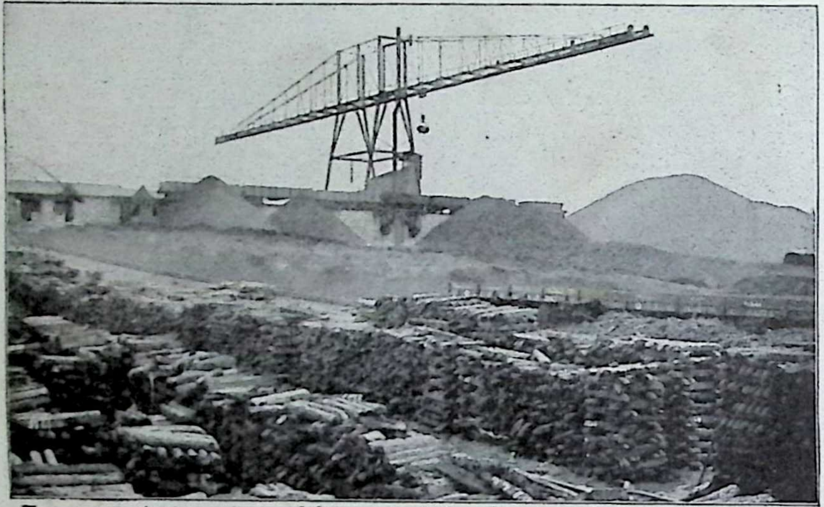

FIG. 155. *A storage yard for materials, showing the traveling crane.*

Suggestions for Review

(1) Where would lighthouses be needed along the shore of this group of states? (2) Why is there an important navy yard at Portsmouth, Va.? (3) The water gaps where the rivers flow through the mountains are sometimes called "Gateways to the Continent." Why? (4) Find out about the Iroquois Indians and where they lived. (5) Why were they rich and powerful? (6) Go to a grocery store in the spring or summer and find out what vegetables or fruits come from the southern states. (7) Find out about a kind of sugar that is made in New England and in New York state. (8) Coal is shipped from Norfolk, New York, and Philadelphia. Along what river valleys is it brought to these seaports? (9) Tar is a product of a southern pine tree. For what is it used? (10) Some kinds of oysters are called Cape Cod, Rockaway and Providence River oysters. Where do they come from? (11) Find out all you can about the life of coal miners. (12) Find out how sugar is made from sugar cane.

XXIV. MIDDLE AND SOUTHERN ATLANTIC COAST STATES

(*Continued*)

Manufacturing. A very large part of the products of the several occupations we have already studied must be manufactured into finished products before they can be used in commerce. With an abundance of raw products, plenty of fuel and water power, and with excellent opportunities for interior or oceanic commerce, the northern states have naturally become the most important manufacturing states of the Union. In the southern states manufacturing is constantly increasing, but a large portion of the products is shipped elsewhere for manufacturing.

The chief manufacturing city of this group of states and of the country is *New York*, which leads in the production of ready-made clothing and furniture and in book and magazine publishing. *Philadelphia*, Pa., is famous for its hosiery and leather-tanning industries. Owing to the many available rail and water routes, these two cities have marvelous facilities for securing raw products and for selling finished products, and hence are the two largest cities of the eastern United States.

Pittsburg, Pa., very close to the iron and coal mines of Pennsylvania, is naturally the leading city in iron and steel-making. *Trenton*, N. J., near the clay plains of southern New Jersey, is the first city in the country in making pottery.

Among the cities whose supremacy depends largely on the presence of fine water power are *Troy*, N. Y., which makes more than four-fifths of all the collars and cuffs turned out in the United States, and *Paterson*, N. J., which manufactures nearly one-fourth of all the silk made in the country.

South Carolina makes more cotton goods than any other state in the Union except Massachusetts, and North Carolina ranks next.

Commerce. The commerce of the middle and southern Atlantic states does not depend entirely upon the products raised within the region, because goods are brought in great abundance from the interior states for export to foreign countries. Thus the Atlantic seaports are very important national commercial cities. *Nearly one-half* the trade of the United States with foreign countries is carried on through the port of *New York*. *Philadelphia* and *Baltimore* are the fifth and sixth cities in the Union in the value of their commerce.

The harbors of these three cities are very large, but that of New York is the best because vessels can more readily and quickly get to the open sea. (See Fig 157.) The railroads and canals which connect New York City and the Hudson River with Buffalo and the Great Lakes are very important lines of commerce. New York City is thus favored in having an easier connection than any other city with the great agricultural and manufacturing regions of the western states.

New York is also the leading port for European commerce, and in the summer season the several lines of steamers are crowded with tourists for all parts of Europe. As a result of its commerce and its manufacturing, New York City is now the *second largest city of the world.*

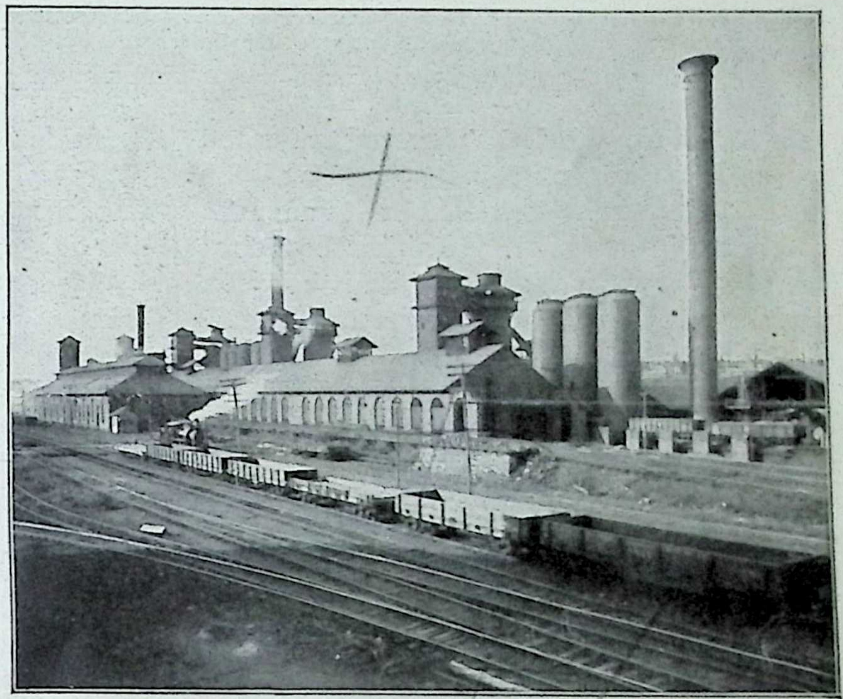

FIG. 156. *Blast furnaces, stock houses, and engine house of a Pennsylvania steel manufacturing company.*

City Life and Transportation. The large number of people in a great city like New York makes it necessary to have extensive markets, many street and steam railroads, many large stores and parks, places of amusement, and schools of all kinds. Thus a large city tends to grow larger all the time, and in it nearly every form of industry can be found. (See Fig. 159.)

The task of carrying people quickly from one place to another in a large city is a very serious one, because most people must live some distance from their business. In New York City, Boston, and in Chicago elevated roads have been running for years (see Fig.

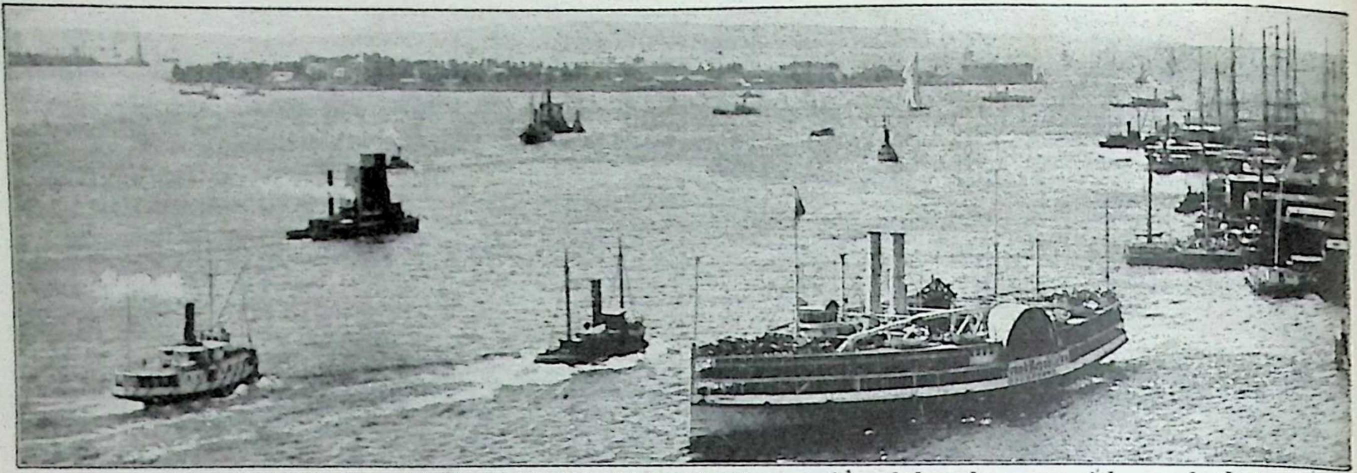

FIG. 157. *New York Harbor. To the right of the picture is shown a few of the wharves, with vessels that sail to all parts of the world. In the foreground is an excursion steamer, and one can see a floating grain elevator, tugs, and other craft.*

158), but in New York the elevated trains and the surface cars are unable to handle all the business. A tunnel has been built under the whole length of the city to aid in the task of carrying people back and forth daily between their homes and their business offices.

Other Important Cities. Other important cities of the northern group are *Buffalo*, *Syracuse*, and *Rochester*, N. Y., all manufacturing and commerical cities. Buffalo is especially important for its commerce with the interior of the United States, owing to its advantageous position on the Great Lakes. *Erie*, Pa., is principally an iron and coal port.

Richmond, Va., is one of the most important tobacco cities of the country, and *Norfolk*, Va., is a leading cotton and coal port.

Atlanta, the largest city in this group of states south of Baltimore, is a great railway center, and a rapidly growing industrial city.

Tampa and *Pensacola*, Fla., *Savannah*, Ga., *Charleston*, S. C., and *Wilmington*, N. C., are the leading ports of the Southern Atlantic Coast States. Tampa, as the nearest port to Havana in Cuba, is especially important. *Jacksonville*, Fla., is a shipping port for oranges and a winter resort.

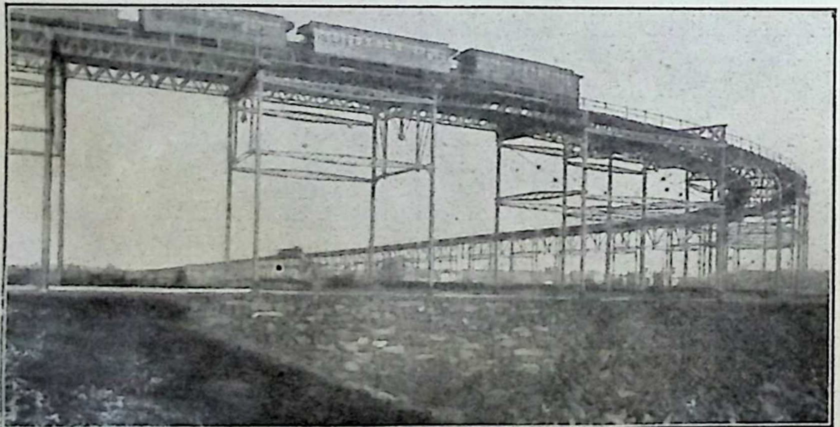

Fig 158. *One method of city transportation. An elevated railroad higher than a six-story building.*

Scenery. The coast of New Jersey is occupied by seashore resorts, of which *Atlantic City* and *Ocean Grove* are the most important. The Adirondack Mountains, with their many lakes and magnificent forests, are a famous canoeing and camping region, and contain many large summer hotels. Owing to the healthfulness of the air in this region the Adirondacks are also a renowned health resort. The mountains of southern New York, New Jersey, Pennsylvania, and Virginia are noted for their beauty.

One of the best ways to see the beauty of mountains is from the trains of the railway lines which cross the mountains through the narrow valleys. The Hudson River valley is famous the world over for the beauty and grandeur of its scenery.

In New York there are many large lakes and

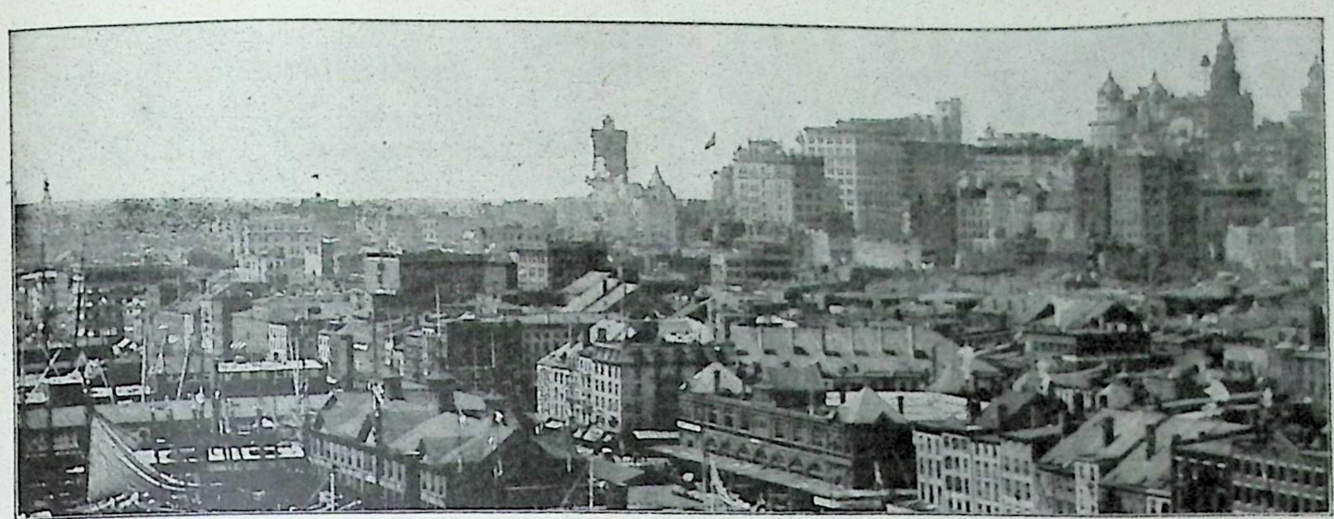

FIG. 159. *A glimpse over the roofs in the commercial section of New York City. The district has grown so crowded and business so great that very tall buildings have been erected. The tallest building in the picture is twenty-six stories in height, the highest in the world, and houses 4,000 people.*

beautiful waterfalls, including the noted *Niagara Falls*, formed by the water falling over a high cliff on its way from Lake Erie to Lake Ontario. (See Fig 160.) There are many falls in the United States where the water leaps from a greater height, but none where the fall of water in a given time is so great and is so mighty in its power. The water at Niagara falls 160 feet and then flows for several miles through a narrow precipitous gorge, and at a speed faster in places than that of a railway train. The great power of Niagara is now being in part used for manufacturing purposes.

Another bit of scenery of great fame and beauty is the *Natural Bridge* in Virginia. (See Fig. 161.) The bridge is part of the roof of an old cave, but the rest of the cave has fallen in, leaving this arch, which remains as a bridge, stretching across from one side of a narrow valley to the opposite side.

The great forests of the Appalachians are very beautiful, especially in the spring and early summer, and are much visited by tourists because of their beauty and healthfulness. In these mountains is Mount Mitchell, the highest peak of the eastern states.

The beaches and river banks of Florida are very popular winter resorts, owing to their warm and balmy climate. Some of the rivers of Florida, like the St. Johns River, are much visited by excursionists because of their beauty, due to their winding courses and to the dense and varied vegetation on the banks. (See Fig. 162.)

District of Columbia. The *District of Columbia* is the one

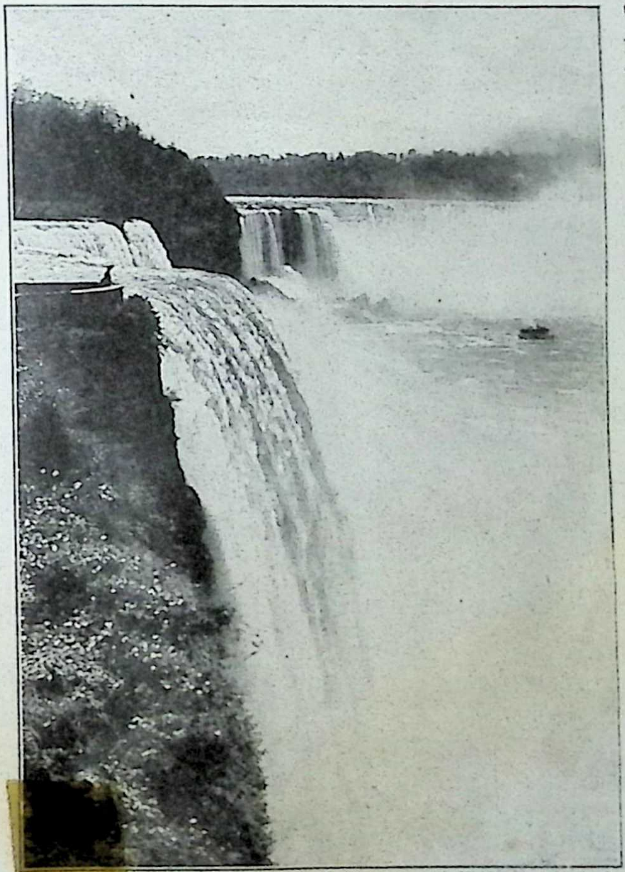

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FIG. 160. *Niagara Falls, the most noted waterfall in the world.*

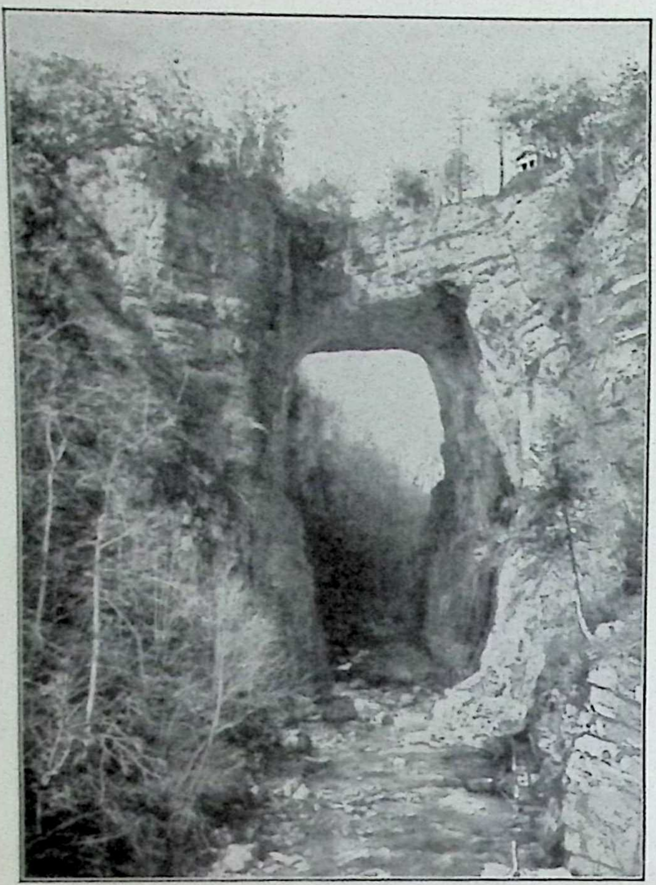

FIG. 161. *The Natural Bridge in Virginia.*

region of this group of states, and indeed of the United States, which is equally interesting to all of us, for it is the seat of the National Government. The important place in the district is the city of *Washington* (see Fig. 163), the *capital of the country*, named after our first President George Washington.

In Washington is the residence of the President, which is commonly known as the White House; the Capitol, at which the men who are elected by the people to make the national laws meet every year; and many other Government buildings. (See Fig. 163.) Among the more important of these Government buildings are the Library of Congress, the National Museum, the Pension Office, the State, War, and Navy Building, and the Bureau of Printing and Engraving. These buildings all offer many attractions, and are visited by large numbers of people from all parts of the country each year. In the Smithsonian Institution are many objects worth seeing.

Washington is also interesting because it is the home of many people from other countries who have come here as representatives of their own governments. Every important foreign country has a representative or *minister* living in Washington, so that our government and other governments can arrange readily any business in which they are both concerned. Some of these ministers dress as in their native lands and live usually as they would at home. On New Year's day all the foreign ministers call upon the President at the White House. They all wear their full official dress or uniform, and make a very striking and attractive picture.

Another object of interest in the city is the Washington Monument, built in memory of George Washington, who selected the site for this beautiful city. This monument is made of blocks of stone and is 555 feet high, and from it one gets a fine view of the

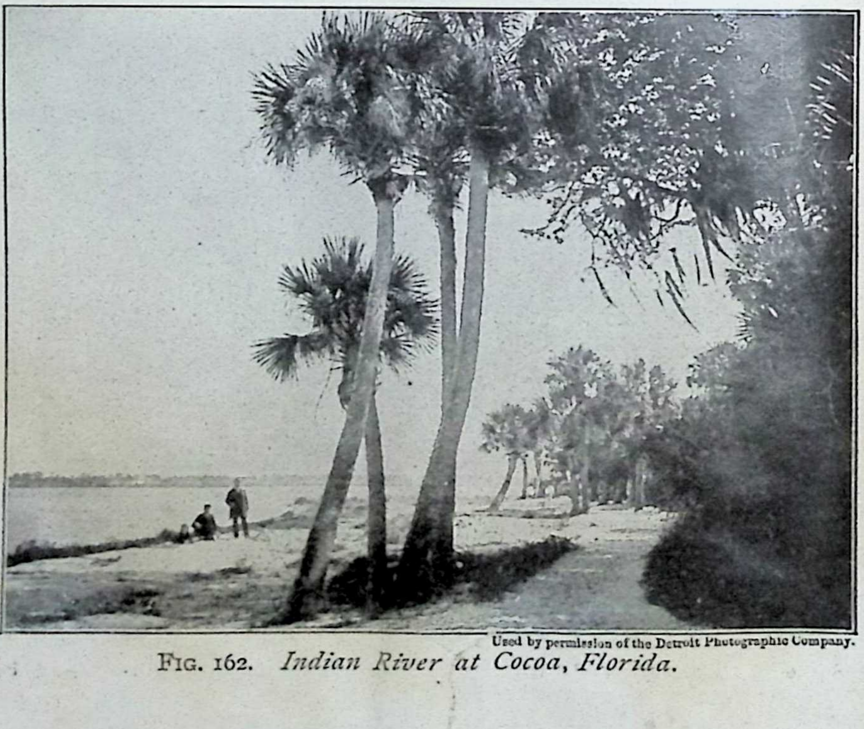

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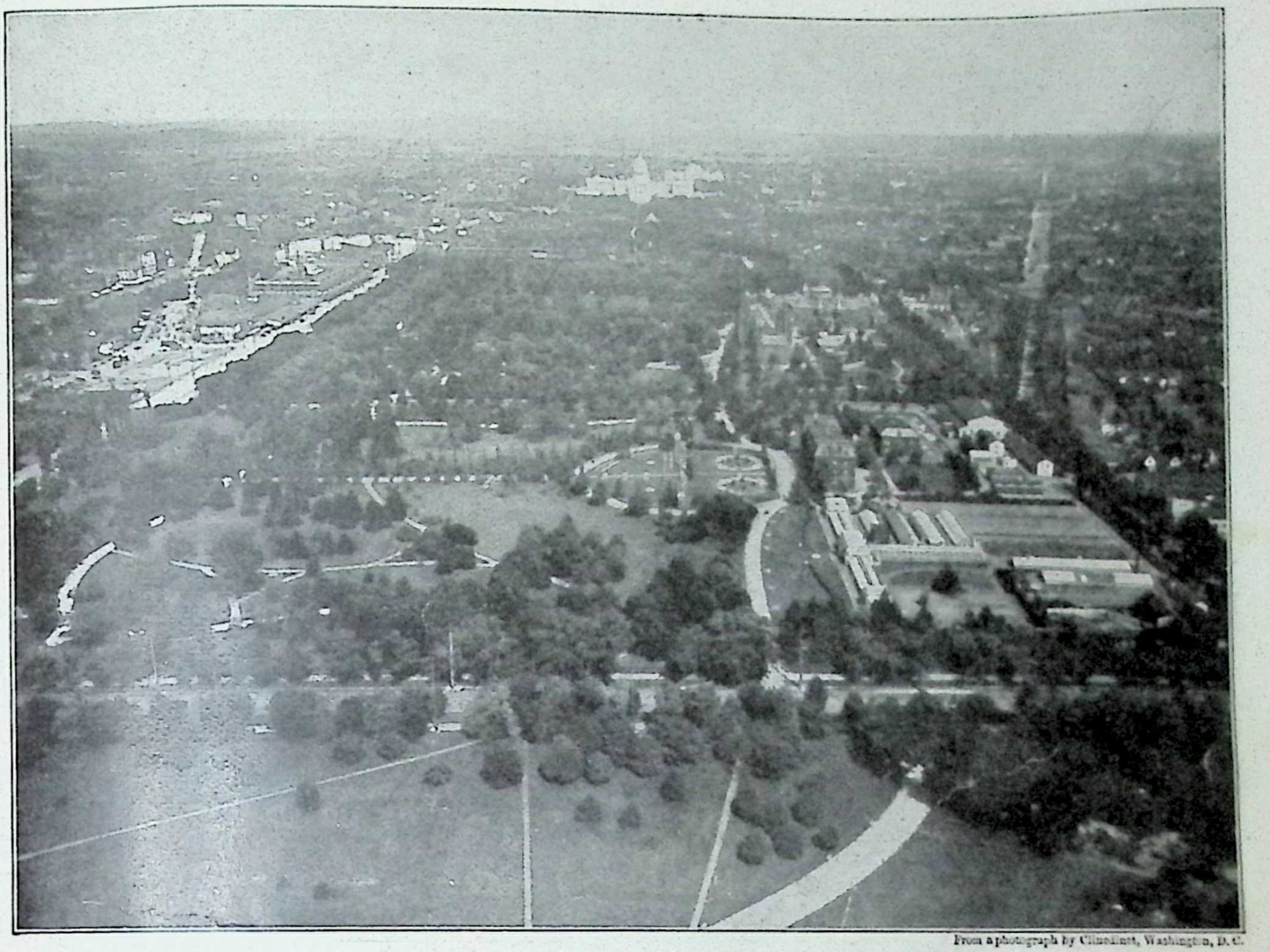
FIG. 162. *Indian River at Cocoa, Florida.*



From a photograph by Clinedinst, Washington, D.C.

FIG. 163. *A view of Washington from Washington Monument, looking toward the Capitol. On the right can be seen the Smithsonian Institution and the buildings of the Department of Agriculture.*

city and surrounding country. Some of the streets of Washington are very broad and beautiful. In many of the parks are statues in memory of American generals and other famous men who have been of great service to the country. Mount Vernon, the home of George Washington, is a charming old southern mansion standing on the banks of the Potomac River not far from the city. It is visited by thousands of tourists every year.

Suggestions for Review

(1) Find out some of the important coastwise routes from New York and Philadelphia. (2) What large cities are close to New York? (3) Why are they large? (4) What beaches are nearest to New York? (5) To Philadelphia? (6) The western part of Niagara Falls is called the Canadian Falls. Why? (7) The St. Johns River is much used for coastwise commerce. Why? (8) Who is your Congressman? Who are the Senators from your state? (9) Give as many reasons as you can for the size and importance of New York. (10) Why is the harbor of New York better than that of Philadelphia? (11) What have you seen that came from the Department of Agriculture in Washington? From the Post Office Department? (12) Find out about the Weather Bureau and its work. (13) How is Buffalo supplied with electricity for its electric lights? (14) Why would you expect Pittsburg to be a "smoky city"? (15) What have you seen that came from Florida? From Virginia? (16) Why do some people who spend the summer in Maine go to Florida in the winter? (17) What natural conditions combine to make Pittsburg a great center of industry?

XXV. SOUTHERN STATES OF THE MISSISSIPPI BASIN

STATE	*Abbreviation*	*Area in sq. miles*	*Population 1900*	*Chief City*	*Population 1900*	*Capital*
Tennessee	Tenn.	42,022	2,020,616	Memphis	102,320	Nashville
Alabama	Ala.	51,998	1,828,697	Mobile	38,469	Montgomery
Mississippi	Miss.	46,865	1,551,270	Vicksburg	14,834	Jackson
Louisiana	La.	48,506	1,381,625	New Orleans	287,104	Baton Rouge
Texas	Tex.	265,896	3,048,710	San Antonio	53,321	Austin
Arkansas	Ark.	53,335	1,311,564	Little Rock	38,307	Little Rock
Oklahoma	Okla.	70,057	790,385	Oklahoma	10,037	Guthrie

General Character of the Section. The *Southern States of the Mississippi Basin* (see Fig. 168) are similar to the group of states to the north in their surface features and soil, but are different in climate. The crops are mainly those that require a high temperature during the summer, and the people do not need as warm houses nor as warm winter clothes as do the people who live in the northern states.

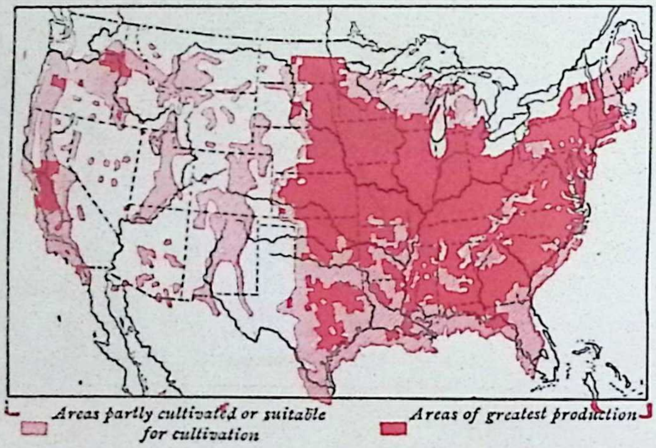

Areas partly cultivated or suitable for cultivation
Areas of greatest production

FIG. 164. *Map showing the agricultural areas of the United States in 1900.*

Surface. The surface of these states is almost wholly a great plain. The portion bordering the Gulf of Mexico is very flat, especially in Texas, and is really *a continuation of the Atlantic Plain*. Along the Mississippi River is a broad, flat alluvial plain of very fine detritus, through which the great river flows in a winding course. A large part of this plain is below the level of the Mississippi River, and the river is kept from flooding the plain by high banks or *levees* (see Fig. 165) which have been built to hold the water back. In times of very high flood the waters break through the banks of the river, causing a vast amount of damage to property and crops. The soil of the plain is very rich. Sugar and cotton are the chief products.

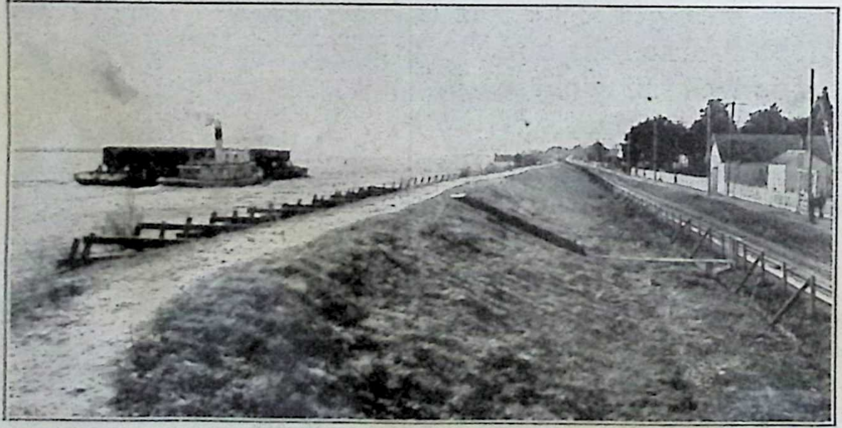


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FIG. 165. *The levee of the Mississippi River near New Orleans. Notice the piles driven to prevent the washing away of the banks.*

The only important mountains of this group of states are along the eastern border of Tennessee and in northern Alabama. The *Appalachian Mountains* border Tennessee on the east and extend into northern Georgia and Alabama as low hills. Just west of the Tennessee River are the *Cumberland Mountains*, or *Cumberland Plateau*, which extends across eastern Kentucky and Tennessee.

Grown girls hats /

A group of low mountains, in many ways very like the Appalachians, is found in southern Arkansas and in eastern Oklahoma. The northern part of this highland area is similar to the Cumberland Plateau in its surface and rivers, and is devoted to the same industries.

Between the Cumberland Plateau and the Appalachian Mountains is the famous valley of *East Tennessee*, which, like the valley of the Hudson River, lies between the plateau on the west and the mountains on the east. This valley naturally is the route of the principal lines of railroads and therefore of commerce between the cities of the northern and those of the southern states.

Drainage. The important river of this group of states is the *Mississippi*, which, with its tributaries, drains a large part of the area, and furnishes a water route for commerce of such great importance that New Orleans has become the third commercial city of the Union.

The other rivers are mostly short, and flow direct to the Gulf of Mexico. The eastern Gulf rivers drain a populous and rich country. Their mouths are in small bays, which are the only irregularities of a very straight shore line, and hence are the only harbors. The many rivers of the western Gulf are not important commercially.

In the western portion of Texas the country has so little rainfall that many of the rivers dry up in the summer so that they can be crossed almost anywhere.

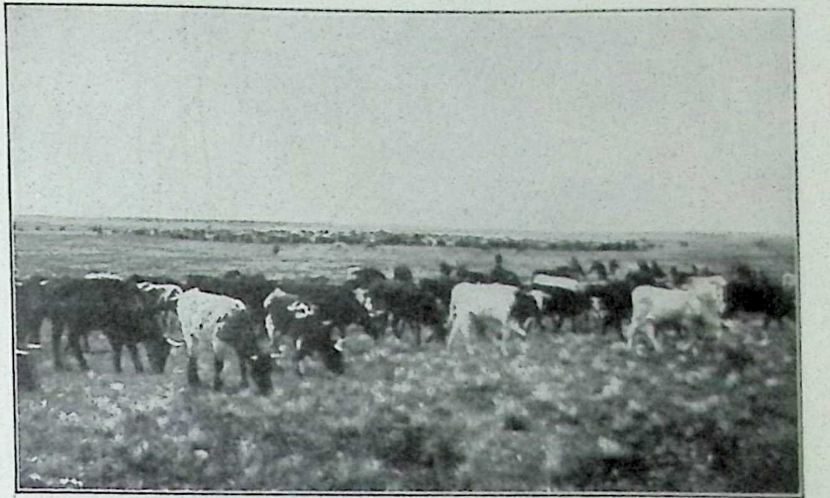


FIG. 167. *Scene on a Texas cattle range. A bunch of cattle being driven from one range to another in search of better grazing.*

Climate. The climate of this group of states is warm and moist except on the plateaus and in western Texas. On the Cumberland Plateau it is always cool and comfortable at night even when the day has been very warm. The southern portion of this region has little frost, hence is favorable for growing sugar cane, which requires nearly a year to mature. The region about the lower Mississippi *receives more rain than any other part of the eastern United States.* In the summer months it rains nearly every day. Here vegetation grows very rapidly and densely, and trees or vines cover all the land not used for farming.

As one goes west into Texas the climate grows more and more dry, until in the western part of the state crops cannot be raised except by irrigation.

The soil, the climate, and the surface, therefore, make this group of states a great agricultural and grazing region.

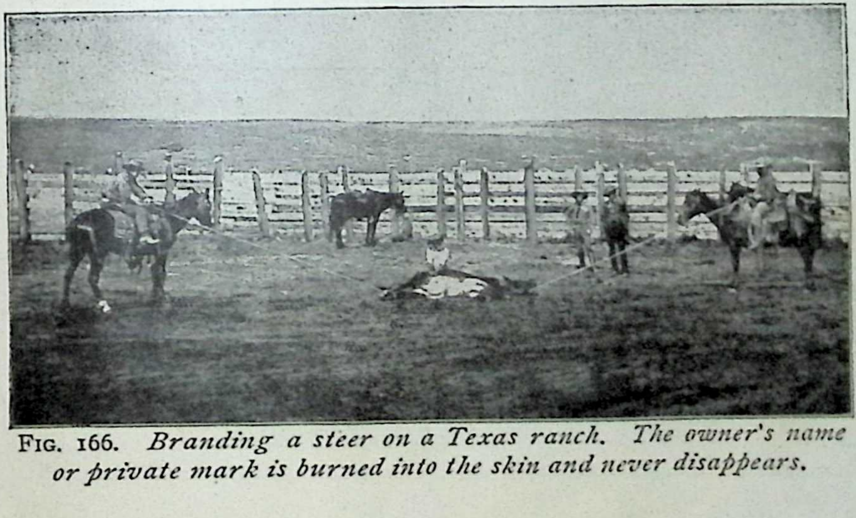
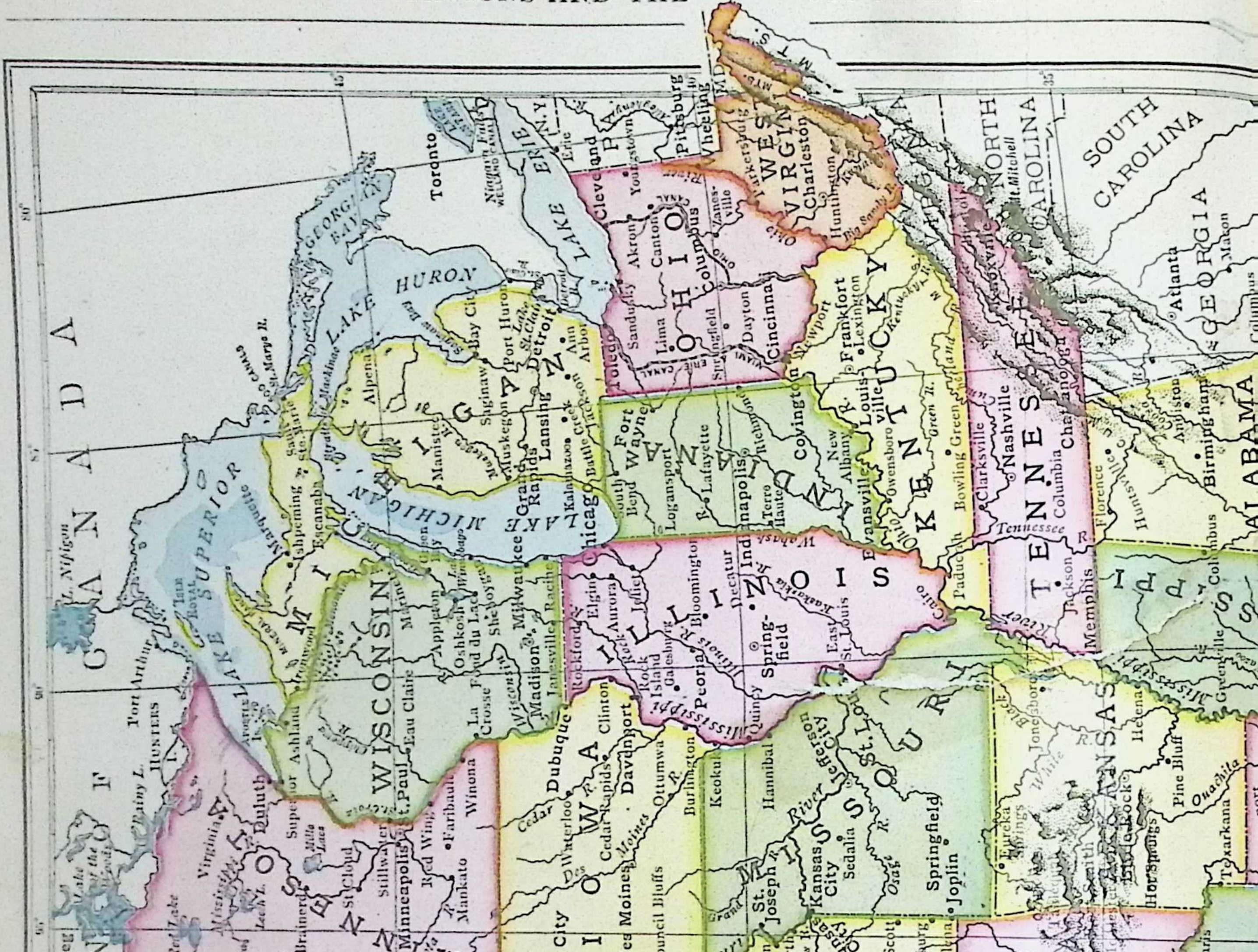


FIG. 166. *Branding a steer on a Texas ranch. The owner's name or private mark is burned into the skin and never disappears.*


DOMINION OF CANADA
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
GEORGIAN BAY
LAKE ERIE
L. Nipigon
Lake of the Woods
Rainy L.
Red Lake
Winnipeg
Port Arthur
Toronto
MINNESOTA
Duluth
Superior
Virginia
Mille Lacs
St. Cloud
Brainerd
Stillwater
Minneapolis
St. Paul
Red Wing
Faribault
Mankato
Winona
WISCONSIN
Ashland
Eau Claire
La Crosse
Madison
Janesville
Racine
Milwaukee
Sheboygan
Fond du Lac
Oshkosh
Appleton
Green Bay
Marinette
MICHIGAN
Marquette
Ishpeming
Escanaba
Sault Ste. Marie
Alpena
Manistee
Muskegon
Grand Rapids
Saginaw
Bay City
Port Huron
Lansing
Detroit
Ann Arbor
Jackson
Battle Creek
Kalamazoo
NORTH DAKOTA
Grafton
Grand Forks
Fargo
Wahpeton
Devils L.
Jamestown
Bismarck
Valley City
Turtle Mountains
SOUTH DAKOTA
Aberdeen
Watertown
Huron
Pierre
Mitchell
Sioux Falls
Yankton
Deadwood
Lead
IOWA
Dubuque
Clinton
Davenport
Cedar Rapids
Waterloo
Des Moines
Ottumwa
Burlington
Keokuk
Council Bluffs
Sioux City
NEBRASKA
Fremont
Omaha
Lincoln
Nebraska City
Beatrice
Hastings
Grand Island
KANSAS
Atchison
Leavenworth
Kansas City
Topeka
Lawrence
Emporia
Fort Scott
Pittsburg
Galena
Wichita
MISSOURI
Hannibal
St. Joseph
Sedalia
Jefferson City
St. Louis
Springfield
Joplin
ILLINOIS
Chicago
Elgin
Aurora
Joliet
Rockford
Rock Island
Galesburg
Peoria
Bloomington
Decatur
Quincy
Springfield
East St. Louis
Cairo
INDIANA
South Bend
Fort Wayne
Logansport
Lafayette
Indianapolis
Terre Haute
Richmond
Evansville
New Albany
OHIO
Toledo
Sandusky
Cleveland
Akron
Canton
Youngstown
Lima
Columbus
Zanesville
Springfield
Dayton
Cincinnati
KENTUCKY
Covington
Newport
Frankfort
Lexington
Louisville
Owensboro
Bowling Green
Paducah
TENNESSEE
Clarksville
Nashville
Columbia
Jackson
Memphis
Chattanooga
Knoxville
WEST VIRGINIA
Wheeling
Parkersburg
Charleston
Huntington
PA.
Pittsburg
Erie
N.Y.
MD.
VIRGINIA
NORTH CAROLINA
Mt. Mitchell
SOUTH CAROLINA
GEORGIA
Atlanta
Macon
Columbus
ALABAMA
Florence
Huntsville
Anniston
Birmingham
MISSISSIPPI
Columbus
Greenville
ARKANSAS
Jonesboro
Helena
Eureka Springs
Little Rock
Hot Springs
Pine Bluff
Texarkana
OKLAHOMA
Muscogee
Guthrie
Enid
Oklahoma
Shawnee
Ardmore
Paris
Denison
Sherman
Dallas
MONTANA
WYOMING
Cheyenne
COLORADO
Denver
NEW MEXICO
LLANO ESTACADO
ROCKY MOUNTAINS
Mississippi R.
Missouri R.
Ohio R.
Arkansas R.
Red River
Platte R.
Wabash R.
Tennessee R.
Kansas R.

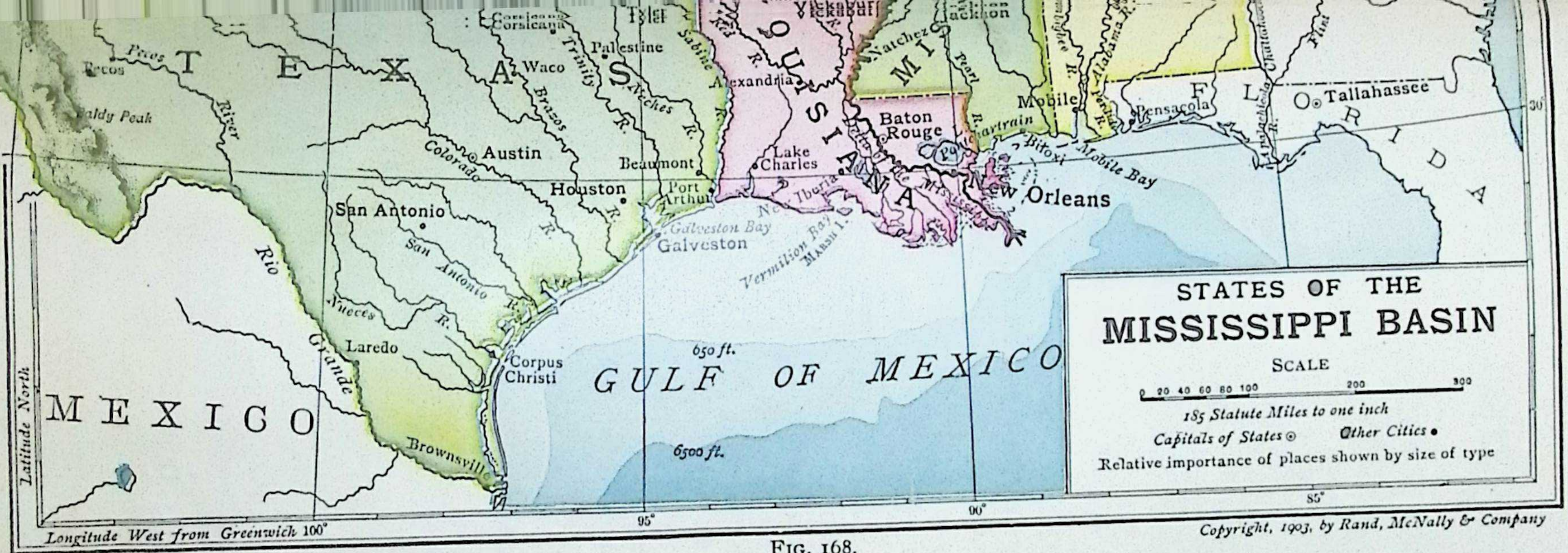


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FIG. 168.

Agriculture. Texas, Georgia, and Mississippi are the most important cotton-raising states of the Union. Practically no cotton is raised in the United States except in the southern Mississippi Basin states and in the southern Atlantic states. (See Fig. 152.)

Louisiana leads the Union in the production of sugar, and Texas ranks first in the United States in the production of rice.

Grazing. In western Texas and Oklahoma it is so dry that few trees grow, and during many months in the year little green grass can be seen except perhaps along a stream. This region (see Fig. 171) does, however, have a large amount of dry brown grass which is excellent food for cattle. So cattle raising, or cattle ranching, is an important industry here. (See Fig. 167.)

As the food is scattered, the land belonging to a man owning thousands of cattle must be very large. Thus the cities and even the small towns are very far apart. The cattle roam freely over a vast area, coming frequently to the wells or watering-places for drink. They are cared for by *cowboys* or ranchmen. The cowboys live a rough, hard life, as most of their work is done upon horseback. Their horses are very quick and sure-footed, and will follow almost anywhere cattle can go. All the cattle belonging to one man are marked or *branded* so that they can be readily recognized. Once or twice a year all the cattle over a wide range are driven together for a *round-up*. Then the calves are branded (see Fig. 166), and stray cattle can be identified and returned to their owners. The cattle are shipped chiefly to Kansas City and Chicago to be slaughtered, or are sent to the eastern United States and Europe.

Mining. Much coal and iron (see Fig. 189) are mined in Alabama and Tennessee. Alabama ranks third among the states of the Union in the production of iron ore, and fifth in the production of coal. Tennessee, Oklahoma, Arkansas, and Texas also are important coal-producing regions. Extensive petroleum fields are found in eastern Texas and extending into Louisiana. Texas now ranks second in production.

Manufacturing. Manufacturing is unimportant in this group of states except in a few large cities, because a large part of the raw products is sent to other states or other countries for manufacturing. Yet Louisiana is the second state of the Union in sugar refining, and Alabama rivals West Virginia for second place among the coke-producing states. Coke is made by removing the gas from bituminous coal. It is used in making the best grades of steel from iron.

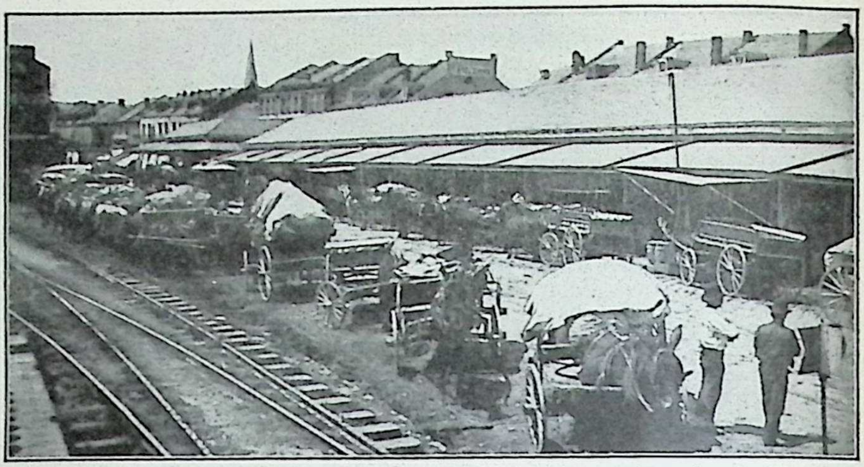

FIG. 169. *The French market in New Orleans. Fresh produce is brought here daily from the surrounding country.*

Birmingham, Ala., manufactures a large amount of steel, and *Montgomery*, Ala., *Chattanooga*, *Memphis*, and *Knoxville*, Tenn., *New Orleans*, La., and *Little Rock*, Ark., are important for their production of finished lumber. Among other manufactured products are cotton-seed oil and ice.

Commerce. *New Orleans*, La. (see Fig. 169), is the leading city in the southern states for oceanic and interior commerce (see Fig. 170), and is the third city in trade importance in the Union. It, with *Galveston*, Tex., the fourth city in trade importance, exports an enormous quantity of cotton each year to foreign countries, and these cities are the leading cotton ports of the United States. Though one hundred miles from the mouth of the great Mississippi River, New Orleans can be reached by large ocean-going vessels. Another great cotton port is *Mobile*, Ala., on the Gulf of Mexico.

Suggestions for Review

(1) Study the map of Tennessee and describe where the important cities are located. (2) Which are the most important tributaries of the Mississippi in the southern states? (3) Which are the most important rivers of the east Gulf region? Of the west Gulf region? (4) What river forms the boundary between the United States and Mexico? (5) What kind of soil lies under New Orleans? (6) Why do the people of New Orleans have no cellars under their houses? (7) Why are the railroads so few in western Texas? (8) Why is ice making an important industry in many southern states? (9) Mention other useful products of the cotton plant besides its fiber. (10) The plantations along the lower Mississippi are very long and narrow. Why? (11) What natural advantages has Alabama that make it a great steel-producing state? (12) Why are some New England cotton manufacturers moving their business to Alabama? (13) Why are Texas cattle that are sent to Europe shipped to Boston and New York, there to be put on shipboard, rather than to New Orleans? (14) Find out all you can about the oil wells of Texas.

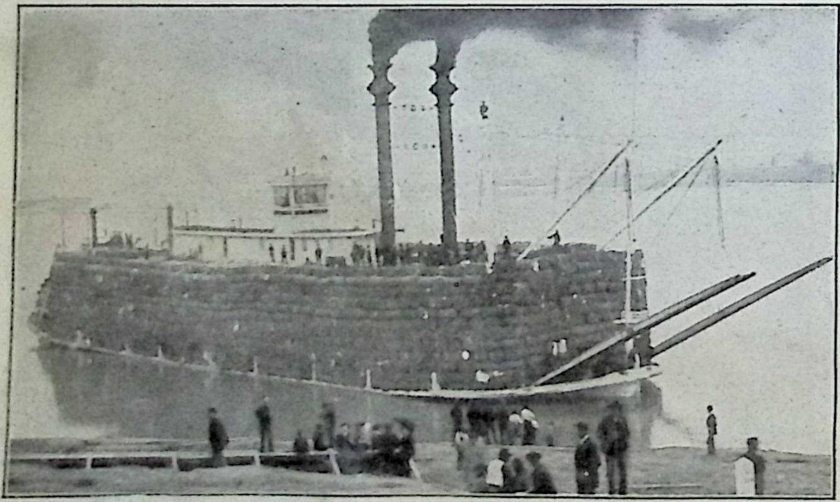

FIG. 170. *A river steamer on its way to the New Orleans market. It is loaded with cotton from Baton Rouge.*

[illegible] Northern States

XXVI. NORTHERN STATES OF THE MISSISSIPPI BASIN

STATE	*Abbreviation*	*Area in sq. miles*	*Population 1900*	*Chief City*	*Population 1900*	*Capital*
West Virginia	W. Va.	24,170	958,800	Wheeling	38,878	Charleston
Ohio	Ohio	41,040	4,157,545	Cleveland	381,768	Columbus
Kentucky	Ky.	40,598	2,147,174	Louisville	204,731	Frankfort
Indiana	Ind.	36,354	2,516,462	Indianapolis	169,164	Indianapolis
Illinois	Ill.	56,665	4,821,550	Chicago	1,698,575	Springfield
Michigan	Mich.	57,980	2,420,982	Detroit	285,704	Lansing
Wisconsin	Wis.	56,066	2,069,042	Milwaukee	285,315	Madison
Minnesota	Minn.	84,682	1,751,394	Minneapolis	202,718	St. Paul
Iowa	Iowa	56,147	2,231,853	Des Moines	62,139	Des Moines
Missouri	Mo.	69,420	3,106,665	St. Louis	575,238	Jefferson City
Kansas	Kans.	82,158	1,470,495	Kansas City	51,418	Topeka
Nebraska	Nebr.	77,520	1,066,300	Omaha	102,555	Lincoln
South Dakota	S. Dak.	77,615	401,570	Sioux Falls	10,266	Pierre
North Dakota	N. Dak.	70,837	319,146	Fargo	9,589	Bismarck

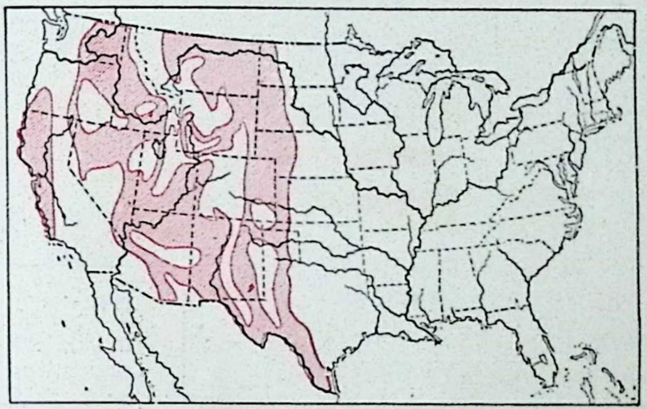

FIG. 171. *Map showing the grazing areas of the United States.*

General Features of the Northern States of the Mississippi Basin. The states of the northern Mississippi Basin form the great food-producing area of the country, for they raise enormous quantities of wheat, corn, and oats. (See Fig. 172.) Horses are also raised in great numbers in all of these states. The soil, surface, and climate must therefore be especially favorable for agriculture and also for grazing. It is evident, however, upon a more careful study of the region, that the climate is unlike that of the southern states, for none of the products is found among those that grow only in a warm, moist climate.

Surface. Except for West Virginia and Kentucky, which include parts of the Cumberland and Allegheny mountains, or plateaus, and for South Dakota, which contains the small group of mountains known as the Black Hills, this group of states contains few areas that can be called mountainous. The surface consists

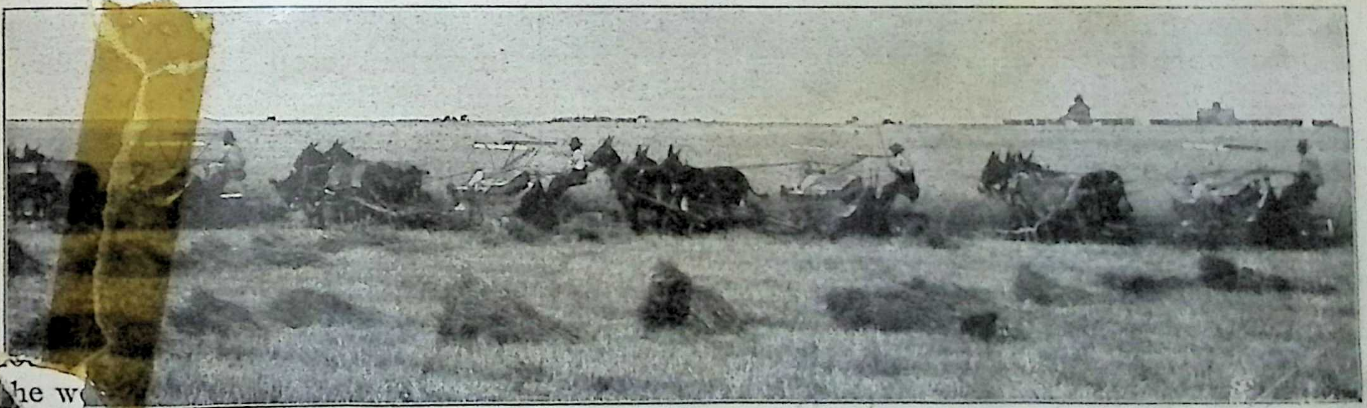

FIG. 172. *Harvesting wheat on one of the great farms of North Dakota.*

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Mi

chiefly of a great plain. The plain is flat or rolling, and nowhere very high except in the extreme western part. The slopes are so gentle and the farms are so large that a farmer can use machinery for doing a large part of the work which must be done by hand in the more rugged eastern states. This, of course, means that the crops can be raised more cheaply than they can in a rugged country, and accounts for the greater size of the farms.

Drainage. The rivers are all a part of the Mississippi System, except a few short ones which empty into the Great Lakes or flow farther north into Canada. The Mississippi is navigable to St. Paul, and several of its tributaries are navigable for long distances. Therefore much commerce in this region can be carried on by water.

The *Great Lakes*, with the canals around the rapids between the different lakes, also form a great water highway, whereby a large part of the products can be easily and cheaply carried to the principal Atlantic ports. The smooth slopes permit railroads to be built in almost any direction. Thus every part of the region has a ready means of sending its products to market, and the large cities on the lakes are important railway centers. Chicago, in fact, is the greatest railway center of the world.

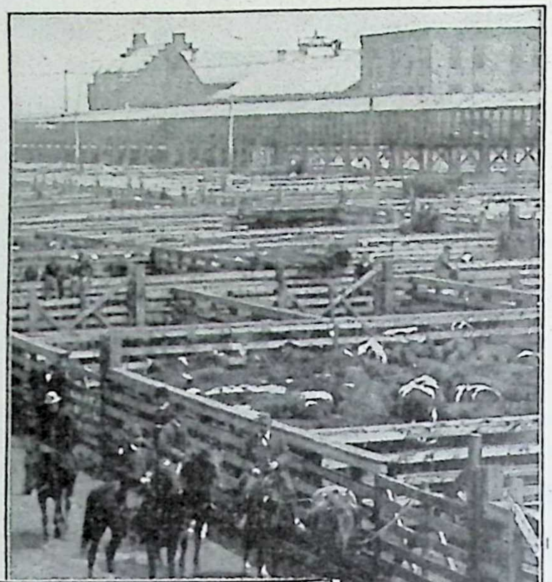

FIG. 173. *In the Chicago stockyards, which occupy over 400 acres. The live stock is brought from the grazing areas. This is the center of the vast packing industry.*

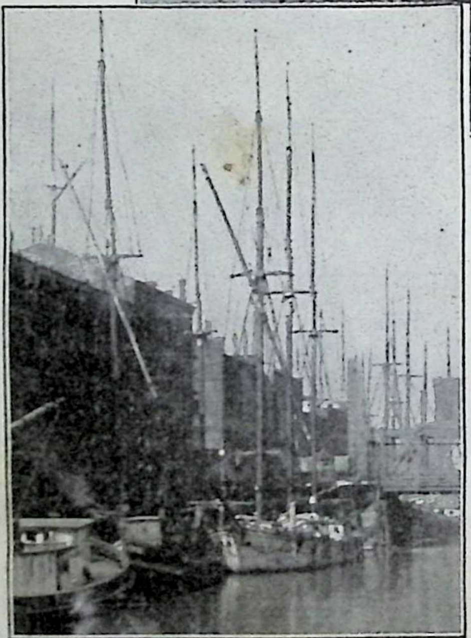

FIG. 174. *Along the Chicago River. Chicago has fifty miles of wharfage, from which is distributed the freight brought by the railroads.*

Climate. This group of states, as a whole, has cold winters and warm summers. In the eastern part the rainfall is sufficient for agriculture, but in the west it is so dry that grazing is the chief occupation, as it is in western Texas. The days in the summer are very clear, and therefore the sunshine is very strong. The abundance of summer sunshine makes it possible to raise corn successfully.

In the winter the northwestern section is very cold, and the wind may be strong, as there are no elevations of land to break its force. In fact, the strong winds often sweep down from the broad, level plains of Canada, and carry severe cold as far south as southern Texas.

Agriculture and Grazing. Minnesota, Kansas, and North Dakota are the chief wheat-producing states; flax is becoming an important crop in the Dakotas and in Minnesota; Illinois, Iowa, and Nebraska lead in raising corn, and Iowa and Illinois lead in the production of oats. Dairying and poultry raising are steadily increasing in Iowa, Missouri, and Minnesota.

In some parts of Iowa and Kansas one may ride nearly all day in a fast railway and see practically nothing but corn-fi

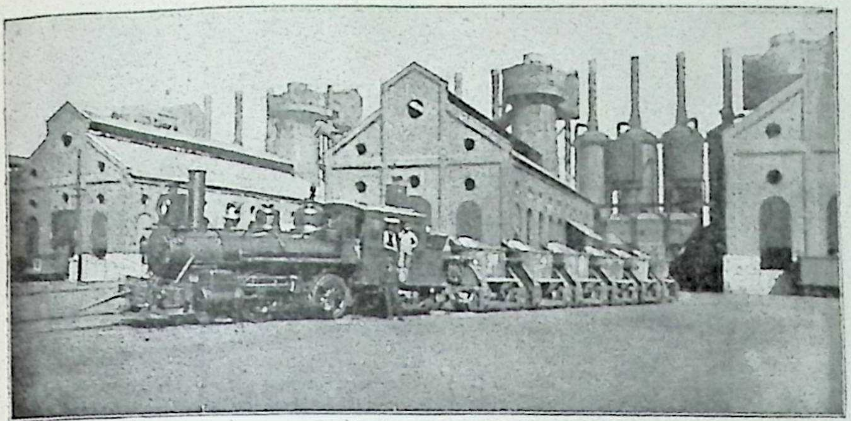

FIG. 175. *Blast furnaces of an ore-smelting plant near Cleveland, Ohio, showing a train of ladles for molten metal.*

every direction. The same may be said about the wheat fields of Minnesota and North Dakota.

Cattle, sheep (see Fig. 188), swine, mules, and horses also are raised in enormous numbers. The cattle in the eastern section of this region are usually kept in fenced pastures on the large farms. In the western portion, where the climate is similar to that of Texas, the cattle roam at will over a vast unfenced region. Iowa has more cattle than any other state except Texas.

Illinois and Iowa are the leading horse-raising states of this section. Ohio, Michigan, and Indiana have great numbers of sheep. Iowa, Illinois, Missouri, Nebraska, Ohio, and Indiana are the great swine-raising states. Missouri ranks next to Texas in the raising of mules.

Mining. Mining (see Fig 189) is also an important occupation in the northern Mississippi Basin states. Coal is mined abundantly in Illinois, West Virginia, Ohio, Indiana, Iowa, Kansas, Missouri, and Kentucky. Natural gas and oil are secured in great quantities in Ohio. West Virginia, and Indiana.

Iron ore (see Fig. 176) is found in such abundance about the west end of Lake Superior, in Minnesota, Wisconsin, and Michigan, that this region is the most important iron-producing region in the United States. Copper is found in great quantities on the south shore of Lake Superior in Michigan.

Gold is mined so extensively in the Black Hills of South Dakota that this state is the *third gold-producing state* in the Union. (See Figs. 177 and 189.) Zinc and lead are important minerals in Missouri and Kansas.

Lumbering. The northern parts of Wisconsin, Michigan, and Minnesota (see Fig. 179) contain many great forests from which much lumber is cut. (See Figs. 180 and 181.) A large part of the product is freighted to and manufactured in *Chicago*, Ill., *Detroit*, *Bay City*, and *Grand Rapids*, Mich., *Minneapolis*, Minn., and other cities.

Manufacturing. Strange as it may seem at first, these agricultural states are also famous for their manufacturing, Illinois and Ohio being among the more important states of the Union in the value of their manufactures. The manufactures are, moreover, closely related to the agriculture and grazing

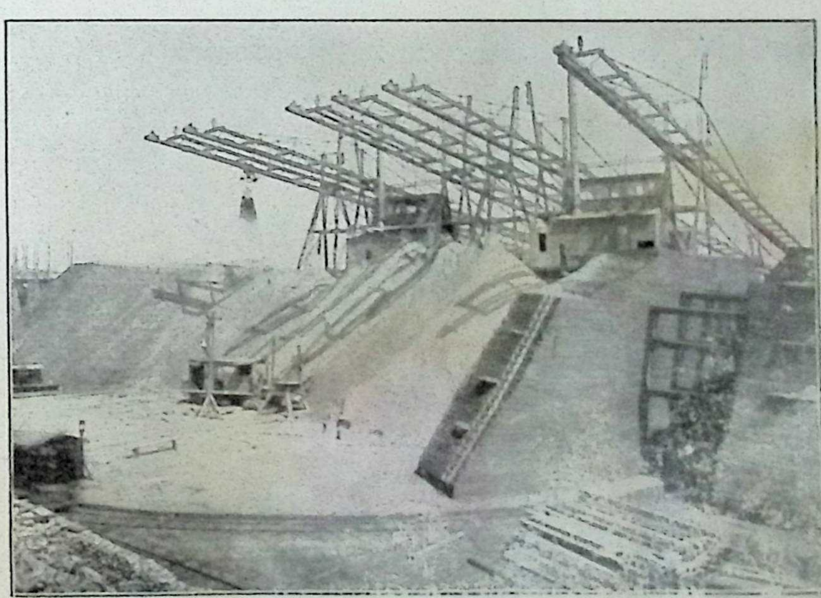

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FIG. 176. *Unloading ore from lake steamers at South Chicago. This ore is brought in whaleback freighters and transferred to the docks by means of huge steel cranes.*

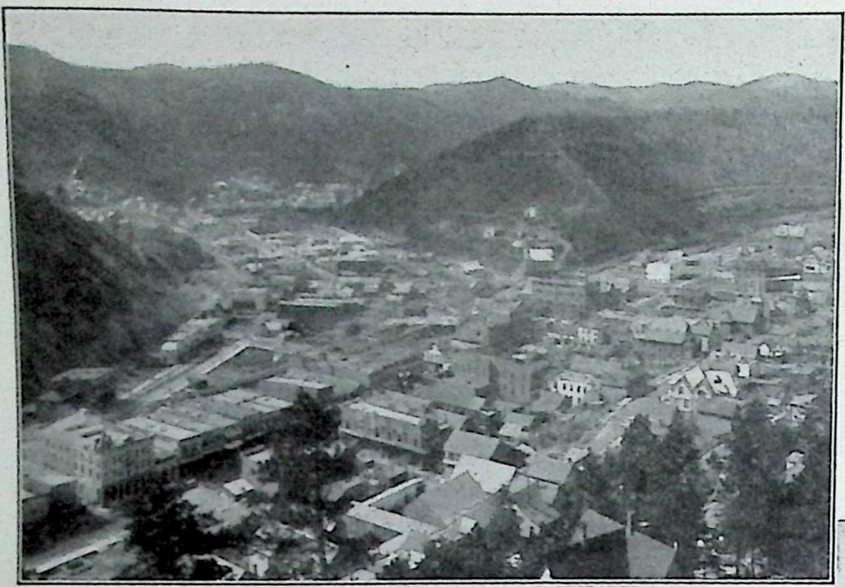

FIG. 177. *A mining city in South Dakota. The earth is honeycombed with tunnels.*

for Illinois is the first state in the Union in making agricultural implements, in slaughtering and meat packing. Ohio ranks first in making carriages and wagons.

Wisconsin is very important for its lumber and timber products, and Minnesota is first in flour milling. No other state in this group takes first rank in manufacturing. *Minneapolis* ranks as the first city in the Union in flour and other mill products.

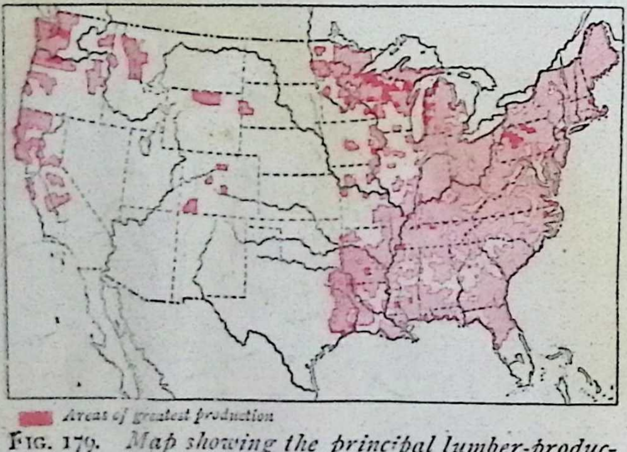

FIG. 179. *Map showing the principal lumber-producing areas in the United States.*

Chicago, Ill., the *second city of the country in size*, is famous for its slaughtering and meat packing, for the manufacture of iron foundry products, finished lumber, and agricultural implements, and, next to New York, is the most important manufacturing city in the country. (See Figs. 173 and 174.)

Kansas City, Kans., *South Omaha*, Nebr., *St. Joseph*, Mo., and *Indianapolis*, Ind., are famous for slaughtering and meat packing.

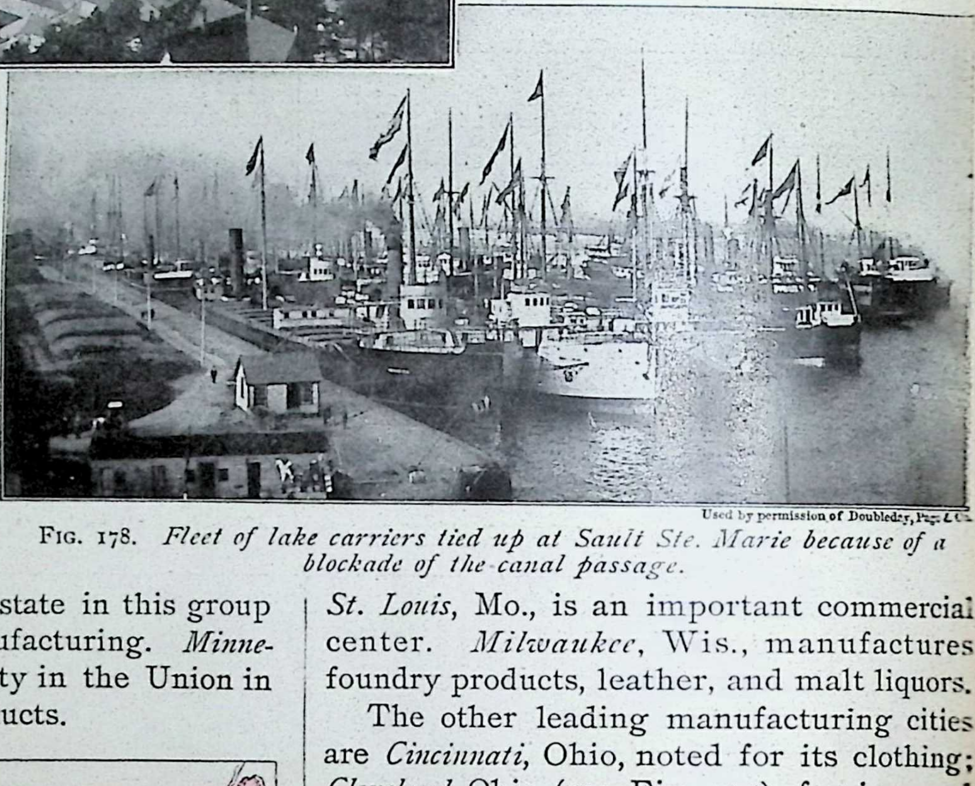

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FIG. 178. *Fleet of lake carriers tied up at Sault Ste. Marie because of a blockade of the canal passage.*

St. Louis, Mo., is an important commercial center. *Milwaukee*, Wis., manufactures foundry products, leather, and malt liquors.

The other leading manufacturing cities are *Cincinnati*, Ohio, noted for its clothing; *Cleveland*, Ohio (see Fig. 175), for iron and steel; *Kansas City*, Mo., for confectionery, flour-mill products, and malt liquors, and *Detroit*, Mich., for its foundry products, medicines, and tobacco.

Commerce. Owing to the many conditions we have already mentioned which make rail and water commerce easy, this group of states contains many important commercial cities. At the head of the list is naturally *Chicago*, with its unsurpassed rail and water connections with all parts of the country. (See Fig. 174.)

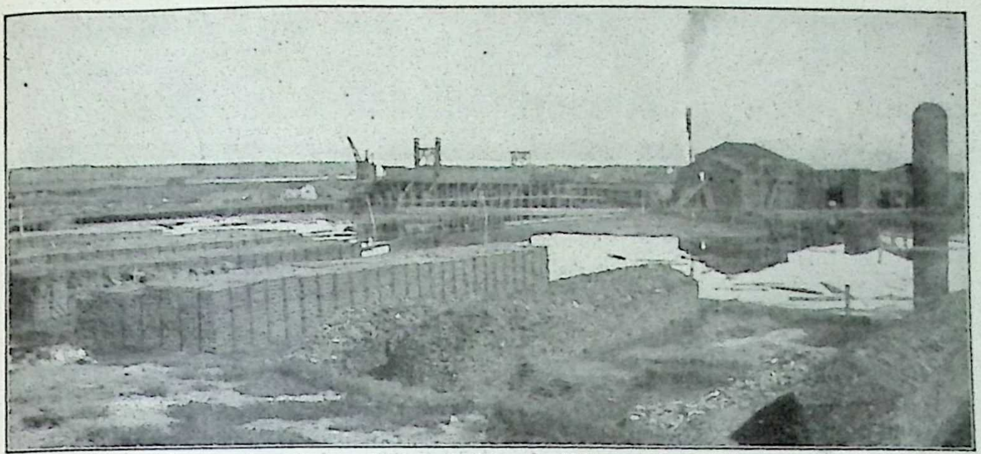


FIG. 180. *A large lumber mill at Ashland, Wisconsin. Thousands of logs are brought here by rail, sawed and planed, loaded into boats, and carried to all the principal lake ports.*

The other important lake ports, all of which carry on trade with Buffalo and New York City, are *Duluth*, Minn., *Superior*, Wis., *Escanaba* and *Marquette*, Mich., in the iron region; *Milwaukee*, Wis., *Bay City* and *Detroit*, Mich., *Cleveland* and *Toledo*, Ohio.

A continuous water trip from Lake Ontario to Duluth is possible because canals have been built around the rapids between Lake Superior and Lake Huron, and between Lake Erie and Lake Ontario. The canals at Sault Ste. Marie, commonly called the *Soo*, are among the most important canals in the world. (See Figs. 85 and 178).

St. Louis, Mo., is the chief Mississippi port, and *Louisville*, Ky., and *Cincinnati*, Ohio, are the leading Ohio River ports.

When we are considering commerce we must remember that in order to have trade, goods must be brought into a region as well as carried out of it. The cities we have mentioned are the centers to which the products of the region are sent for distribution to the rest of the country and the world. They are also centers to which goods needed by the people of the region are brought from all parts of the world for distribution to the small towns and small country stores.

In parts of these states and the rest of the western United States the people live so far apart that there are few stores or large cities. So a great deal of the buying is by mail order from large stores in Chicago or other trade centers.

Scenery. There are few places in these states that are famous for the beauty of their scenery, but the lake region of northern Minnesota is a well-known fishing and hunting district, and the islands in Lake Michigan at the Straits of Mackinac are noted summer resorts. The region as a whole is, however, one of great beauty and of great delight, especially to the traveler who is not familiar with the features of a generally flat country.

In the eastern states of this region the *rolling* country, everywhere covered by grass or crops and with occasional groups of large farm buildings, presents a very beautiful

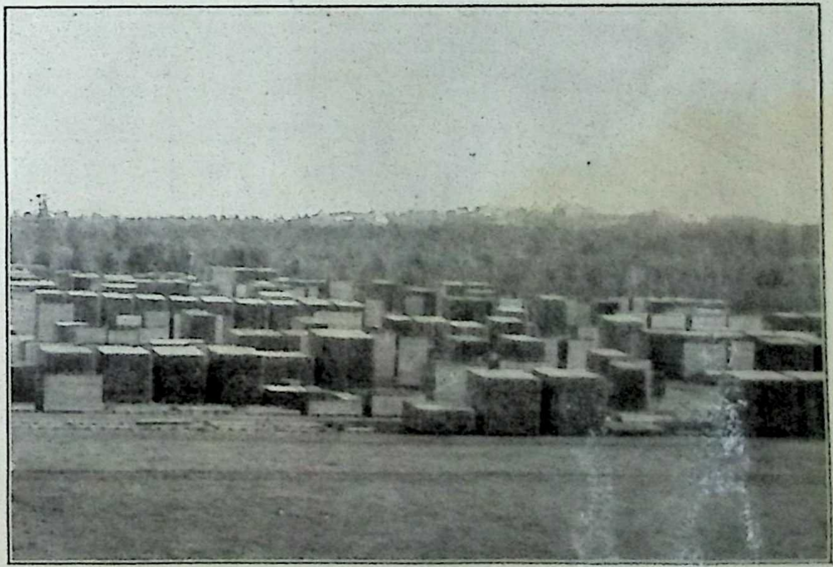


FIG. 181. *A Wisconsin lumber yard. The lumber stored here is sawed at nearby mills or brought direct from sawmills (see Fig. 180) in the timber regions farther north.*

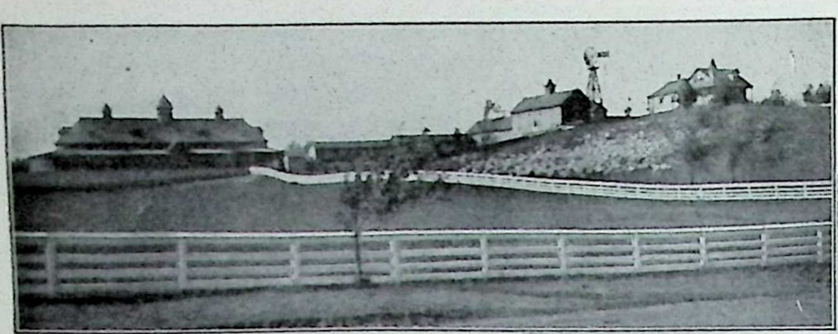


FIG. 182. *A typical modern Iowa farm, showing sheep grazing on the hillside.*

picture to the traveler. (See Fig. 182.) The western states of the area are really in the western part of the United States. The absence of trees, owing to the dryness, the broad rolling hills, the distant views, the great wheat-fields, combined with the clear, cool air of the night, are all strange to one who has his home east of the Mississippi. The landscape is also impressive because of its bigness. We can admire a mountain which rises high above us more easily than a great plain which stretches away for miles in every direction, but the plain is no less impressive or beautiful than the mountain.

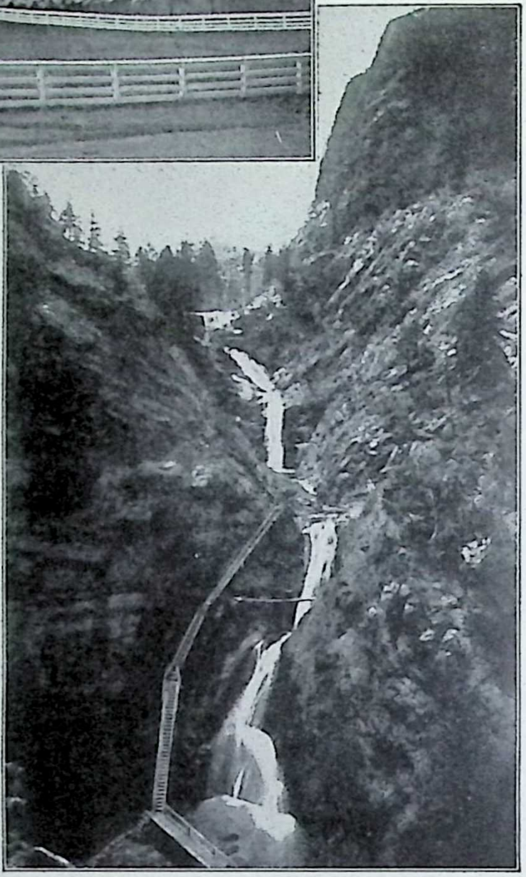


FIG. 183. *Seven Falls, Cheyenne Canyon, near Colorado Springs, Colorado, is noted for its beautiful scenery.*

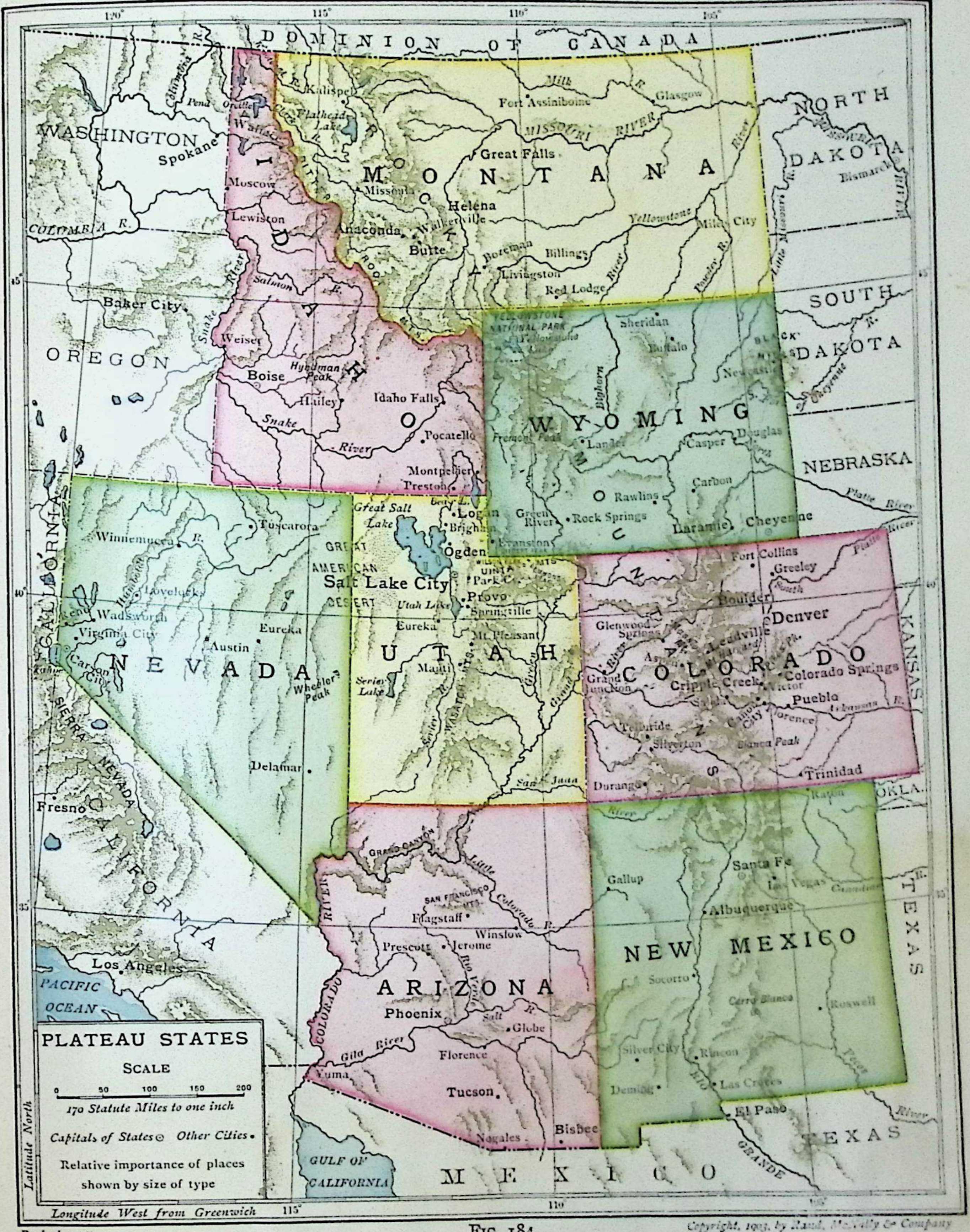
Suggestions for Review

(1) What rivers flow into Canada from the United States? (2) Where is the divide between these rivers and the Mississippi? (3) Why are there so many large cities on the Ohio? (4) Why are the railways more numerous in Ohio than in North Dakota? (5) Why do the railroads of the western states mostly run east and west? (6) Find out what blizzards are. (7) Find out why swine are raised in the same states that raise corn. (8) Study the advertisements in the magazines and find out where household furniture is made. (9) Look at the name on a farm wagon and see where it was made. (10) By studying the labels on a can, find out where canned meats come from. (11) From the label on a bag or barrel of flour, find out where the flour was milled. (12) Study the advertisements in the magazines and see what Great Lake routes are most advertised. (13) Compare farming on a New England farm with that in Minnesota. (14) Mention some ways in which Chicago and New York are alike. (15) What makes Chicago one of the great trade centers of the world?

XXVII. THE PLATEAU STATES

STATE	*Abbreviation*	*Area in sq. miles*	*Population 1900*	*Chief City*	*Population 1900*	*Capital*
Montana	Mont.	146,572	243,329	Butte	30,470	Helena
Wyoming	Wyo.	97,914	29,865	Cheyenne	14,087	Cheyenne
Colorado	Colo.	103,948	539,700	Denver	133,859	Denver
New Mexico (Ter.)	N. Mex.	122,634	195,310	Albuquerque	6,238	Santa Fe
Arizona (Ter.)	Ariz.	113,956	276,799	Tucson	7,531	Phœnix
Nevada	Nev.	110,690	45,761	Reno	4,500	Carson City
Utah	Utah	84,990	207,905	Salt Lake City	53,531	Salt Lake City
Idaho	Idaho	84,313	161,772	Boise	5,957	Boise

Trinkets + house things



Revised, 1907

FIG. 184.

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Importance of the Plateau States. The plateau states (see Fig. 184) are the most thinly populated of any of the states of the Union, and, taken together, they have a population a little smaller than New Jersey. It is very evident, therefore, that the occupations of the people of these states are those of the country rather than of the city, and that large cities cannot be found.

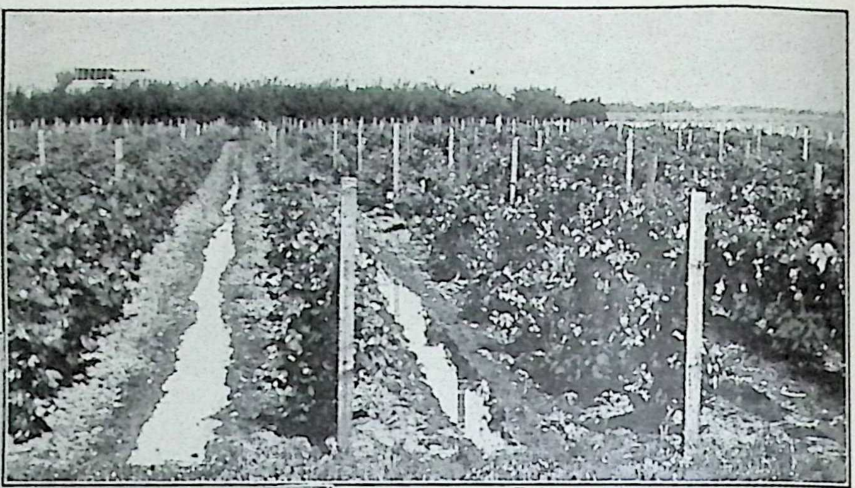

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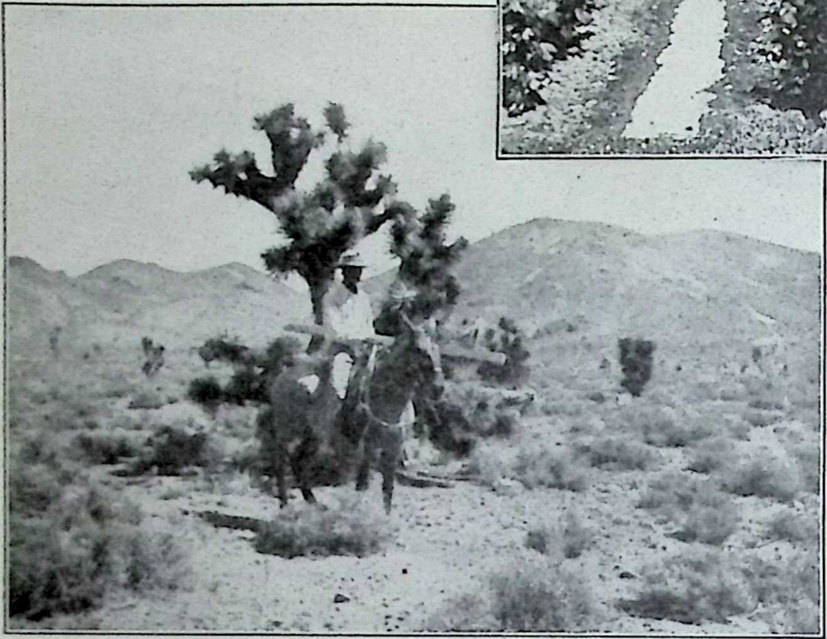
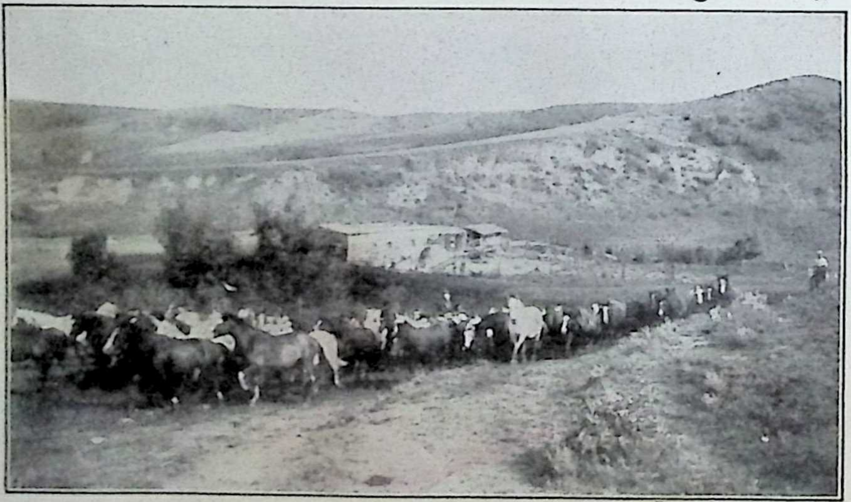
FIG. 185. *Irrigating ditches in a vineyard in the plateau region of Colorado.*



By courtesy of Robert Chapman, Photographer.

FIG. 186. *A giant Yucca or Joshua tree in the desert portion of the plateau states.*

The plateau states are *grazing* and *mining* states (see Figs. 171 and 189), and are especially important for their mining of gold, silver, lead, and copper. From what we have already learned about the grazing industry, it is evident that these states must have a *dry climate.*



From a photograph by Bayliss.

FIG. 187. *A herd of horses on one of the great ranges in Wyoming. The broad slopes of this region are well adapted for grazing, though the grass is scattered.*

Surface and Drainage. The eastern part of the plateau states is really the western continuation of the plains of the Mississippi Valley. West of the *Great Central Plain*, as these dry areas are called, the Rocky Mountains rise sharply, and high mountains abound in all the states.

In Arizona, New Mexico, Utah, and Idaho there are many high and broad plateaus that give the name to this group of states. Some of the mountains rise to a height of 14,000 feet, and many of the plateaus are above 7,000 feet in height; that is, *higher than any mountain found in the eastern states.* The region as a whole, therefore, is rugged and very wild, and traveling through it is difficult.

The rocks of mountains

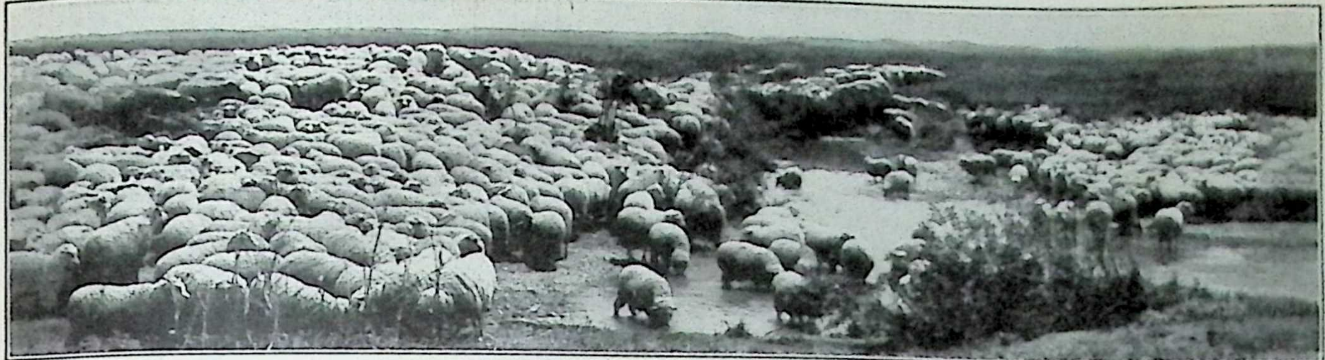


FIG. 188. *A sheep ranch in Montana. Great flocks roam the plains of this state, which surpasses every other in its wool product, and since the introduction of alfalfa fattens increasing numbers of sheep for market yearly.*

often contain mineral wealth, as we saw in the case of the Black Hills. The rocks of the mountains in the plateau states, the highest of the United States, are the richest in minerals (see Fig. 189) of any region, and contribute largely to the wealth of the country.

A large part of the region is drained into the Gulf of Mexico or into the Pacific Ocean, but in Utah and Nevada there is a large area in which the rivers flow down to the lowest levels and there *dry up* or form lakes without any outlet. The rain dries up or evaporates as fast as it falls. Hence there is not enough water to fill the lakes so that they can drain to the sea. All the water contains a small amount of salt, and a large lake contains a great deal. The water which evaporates or dries away from these interior lakes leaves behind all the salt it contains. Hence the lakes are *salt lakes.*

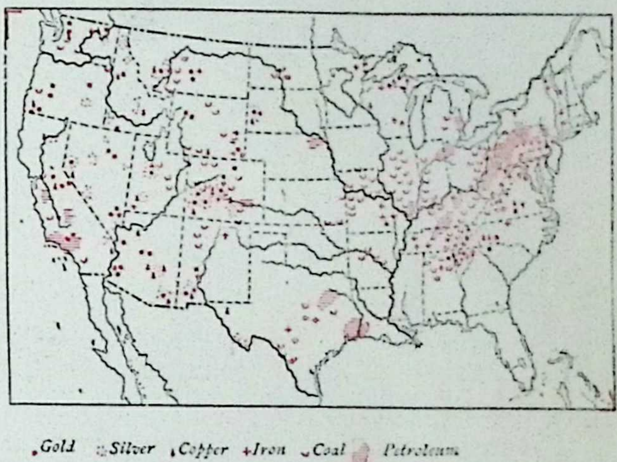


FIG. 189. *Map showing the mining areas of the United States.*

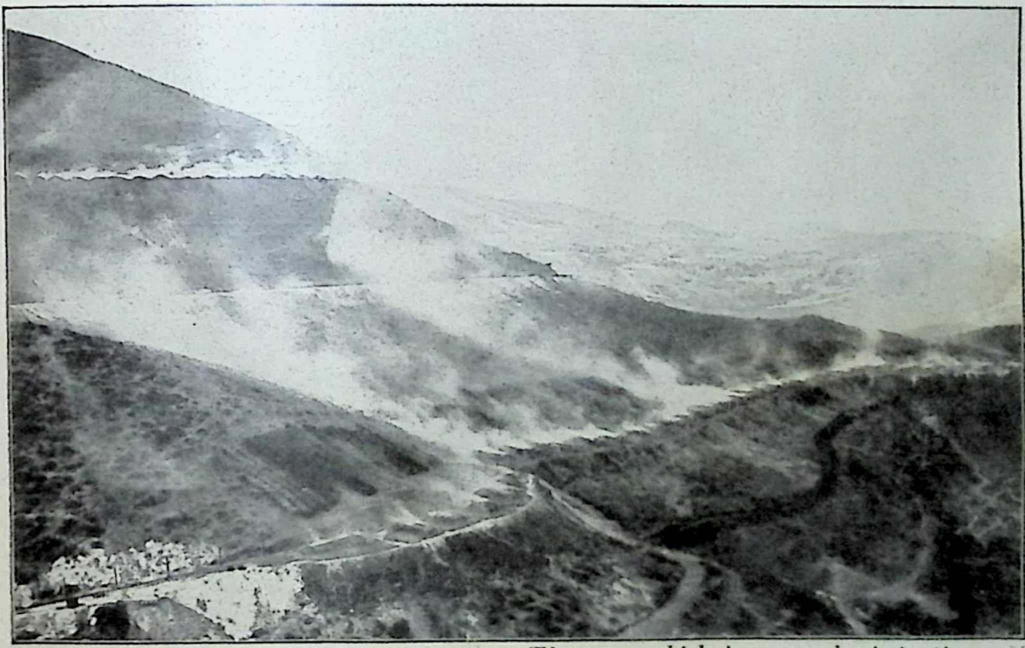
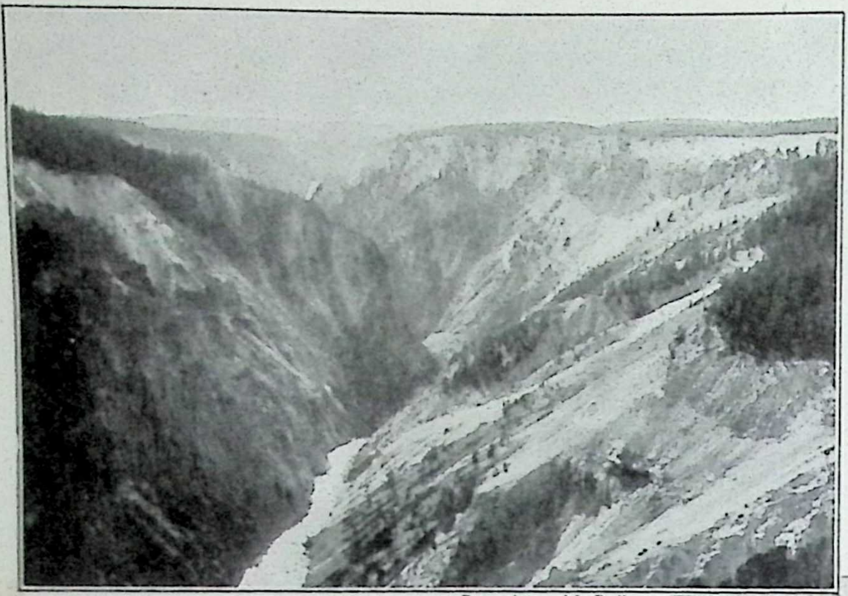


FIG. 190. *A copper mine in Arizona. The ore, which is covered up in tiers all around the hill and roasted, gives off clouds of sulphurous odors.*

Climate. The climate is dry throughout this region because the winds which blow over it from the Pacific Ocean have lost most all of their moisture as rain upon the western mountain slopes. Only the higher mountains in these states receive enough rainfall to



From a photograph by Bayliss.

FIG. 191. *The Grand Canyon of the Yellowstone River, Yellowstone National Park. Notice the wearing away of the slopes by the weather.*

have grass and forests. In the rest of the plateau section it is so dry that agriculture can be carried on only by means of irrigation. (See Fig. 185.)

The mountains are so high that they are very cold in the winter, when they have many heavy snowstorms, during which the railway tracks are frequently buried deep with snow. Sometimes trains are stuck in the snowdrifts for several days at a time.

In southwestern Arizona and eastern California is the *driest region of the United States.* This region is a *desert,* because it is so dry that few plants can grow. (See Fig. 186.) Several areas in the different states are also deserts, though they are not quite as dry as the arid region in southwestern Arizona or that in eastern California. These areas are at present useless for agriculture.

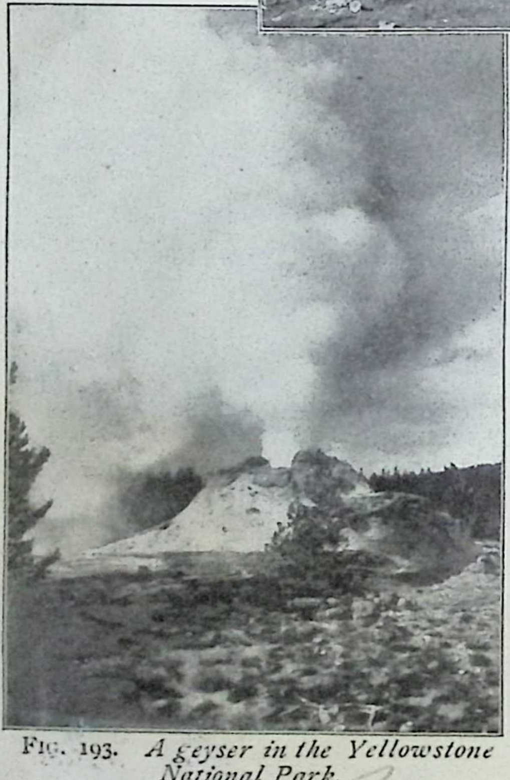


FIG. 193. *A geyser in the Yellowstone National Park.*

Ranching. Ranching, or the raising of cattle, horses, or sheep in large numbers, is carried on either on the plains or in the valleys of the mountain area. In either case the stock must be closely watched by the expert ranchmen to keep them from straying, and to see that they have plenty of water and food. (See Fig. 187.) The wells or springs are in some cases many miles apart, and in the hot summer some of the springs dry up; then the stock has to be moved to another place unless water can be pumped for them from deep underground.

From a photograph by Bayliss.

FIG. 192. *Five cinnamon bears in the preserves of the Yellowstone National Park.*

Not many years ago this region, and indeed a large part of the Mississippi Basin states, was occupied by great herds of *buffaloes,* which were found wherever there was grass. Now the buffaloes are all gone except a few privately kept, but the paths they made going back and forth over the country may still be seen as deep-marked trails. (See Fig. 14.)

Cattle and sheep are the principal products of the land, and are raised for their wool, or are fattened and later shipped to the great slaughtering cities of the Mississippi Basin states, where they are prepared for market.

Montana (see Fig. 188) and Wyoming are the leading sheep-raising states of the Union

Mining. Mining is important in all the plateau states, and minerals are found in some places in such quantities that the towns about the mines are known the world over. *Butte*, Mont., has the greatest copper mines in the world, and Montana is the *greatest copper-producing state of the Union.* Arizona ranks *third.* (See Fig. 190.) Lead is produced abundantly in Idaho, Utah, and Colorado.

Leadville is a great silver-producing city in Colorado, and *Denver* and *Pueblo* in Colorado are famous silver-smelting cities; that is, cities where the ores are freed from their impurities and made into marketable metals. Colorado is the *first state in importance* in silver production and also in gold production. Other important smelting cities are *Salt Lake City*, Utah, and *Reno*, Nev.

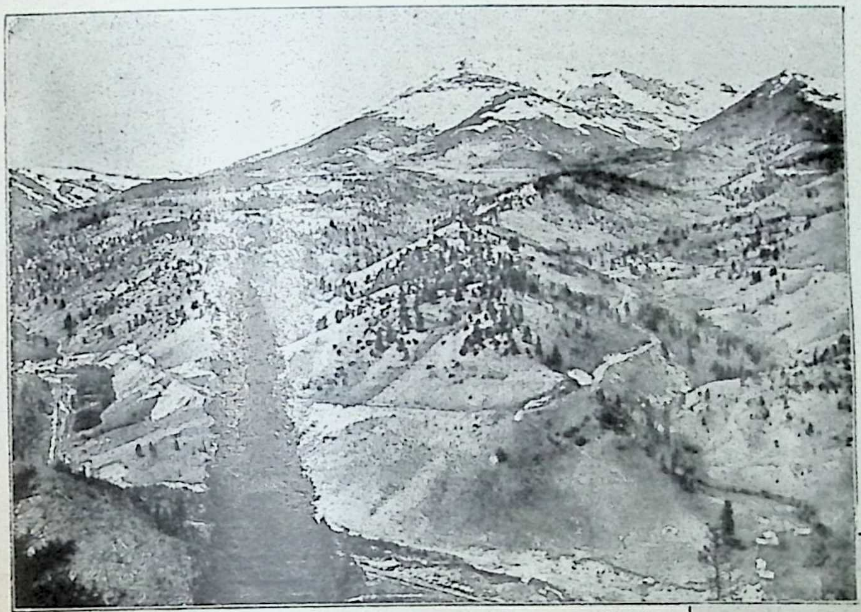


Fig. 194. *Marshall Pass with Mount Ouray; a glimpse of the grand scenery of the Rocky Mountains. Note the way the railway ascends the slopes.*

Scenery. This group of states is full of so many scenes of beauty and wonder that only a few can be mentioned here.

Probably the most wonderful natural feature is the *Grand Canyon of the Colorado.* No other river valley in the known world compares with it in grandeur. The canyon is an enormous river-made valley cut into the broad, level plateau of northern Arizona. In some places it is more than a mile deep and more than ten miles broad. That is, a mountain like Mount Washington or Mount Mitchell, the highest mountains east of the Mississippi River, would not reach the top of the canyon if they were placed in it. It is notable for the unusual colors in the rocky sides. The canyon can now be reached by rail, so that great numbers of tourists and scientists visit it every year. The top of the plateau is covered with a great forest which is larger and grander than almost any other forest area in the United States.

The *Yellowstone National Park*, Wyoming, is one of the most interesting regions of these states. The Yellowstone Park is especially known for its hot springs and *geysers*, which are spouting hot springs. (See Fig. 193.) Throughout this park are scattered more than three thousand places where hot water comes to the surface of the earth in springs and geysers. Some of the geysers spout to a height of

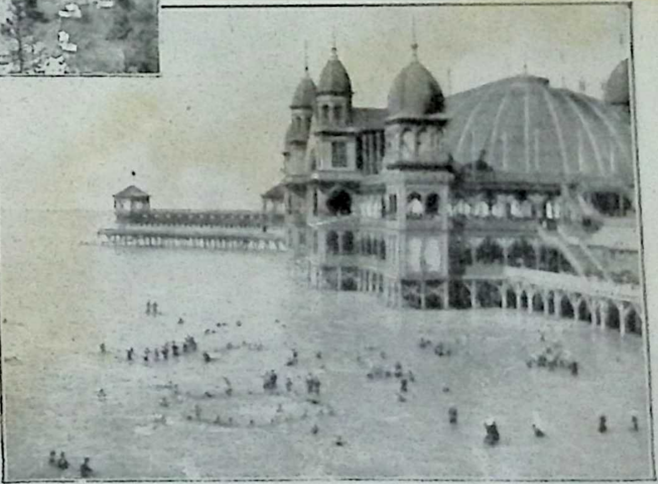


Fig. 195. *A pleasure resort on Great Salt Lake near Salt Lake City, Utah.*

more than two hundred feet and pour out an enormous volume of steam and boiling water.

The *Yellowstone Canyon*, which is deeply cut into a great mass of many-colored rocks, is also an object of marvelous beauty and interest. (See Fig. 191.) The park is now preserved under the care of the National Government, and as no shooting is allowed, wild animals, such as wild geese, beavers, bears, and deer, are very numerous. (See Fig. 192.)

Great Salt Lake, in Utah, is another natural feature which deserves mention. This lake is all that is left of a former fresh-water lake which has dried away. The water that remains is so salt that a man can float in it like a cork. (See Fig. 195.) The bottom of the old lake was covered by detritus carried into the lake by the old rivers. This detritus, like the fine muds of the Mississippi plain, forms very rich soil for agriculture. By means of irrigation ditches, water is brought from the mountain streams to the rich soil, so that large crops are easily raised and the region about Salt Lake City has long been very prosperous.

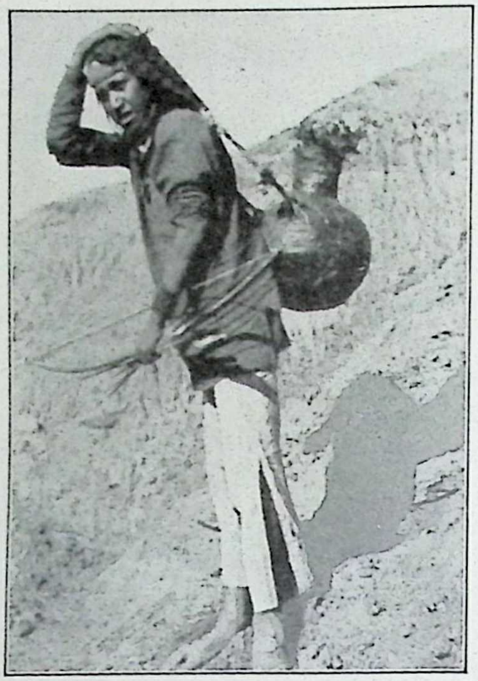


FIG. 196. *A Moki Indian of Arizona carrying water in a basket-work bottle.*

Owing to the dryness of the air, these states are nearly all famous as health resorts, and are visited yearly by great numbers of people from the eastern states. *Colorado* and *Glenwood Springs*, Colo., and *Las Vegas*, N. Mex., are the best known.

The mountains of Colorado, New Mexico, Montana, and Wyoming are all very grand (see Fig. 194); they are also interesting because they contain so many wild animals. This whole region is so grand in its beauties that we ought to call this group of states the Scenic States. (See Figs. 183, 198, 199.)

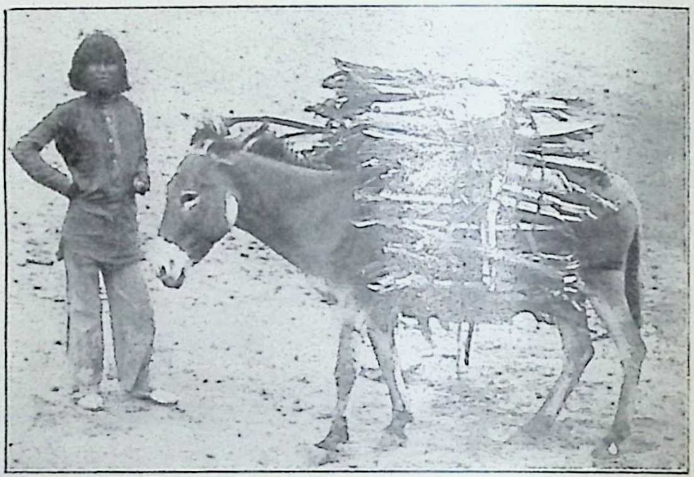


FIG. 197. *A New Mexican native Indian gathering wood.*

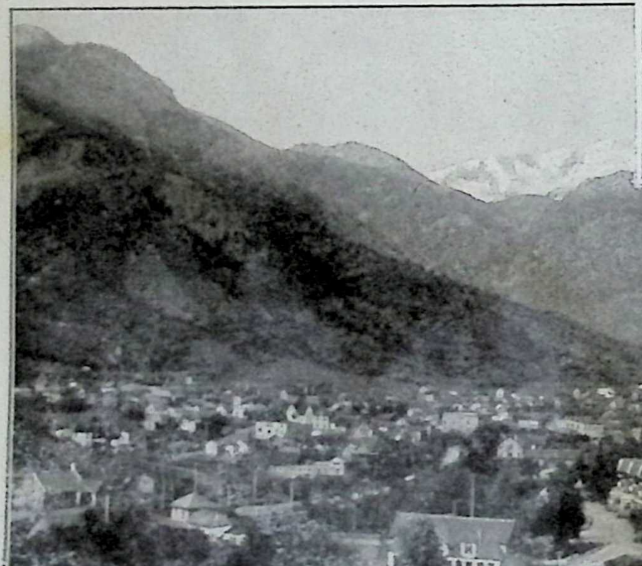


FIG. 198. *The town of Manitou, Colorado, situated near Colorado Springs high up in the Rocky Mountains.*

Indians. In many of the states and territories which lie to the west of the Mississippi River, especially in South Dakota, Oklahoma, New Mexico, Arizona, bare headed grown girls

and Montana, there are large numbers of Indians. (See Figs. 196, 197, 200, and 201.)

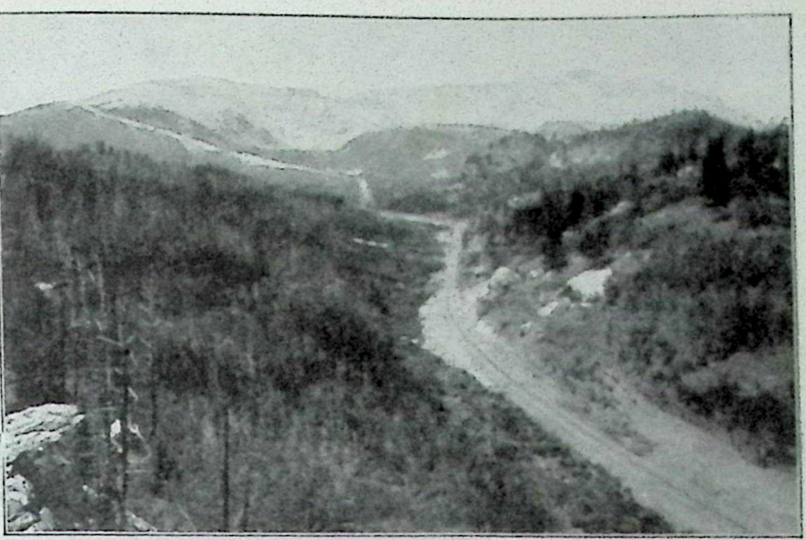


FIG. 199. *Crossing the timber line on Pike's Peak.*

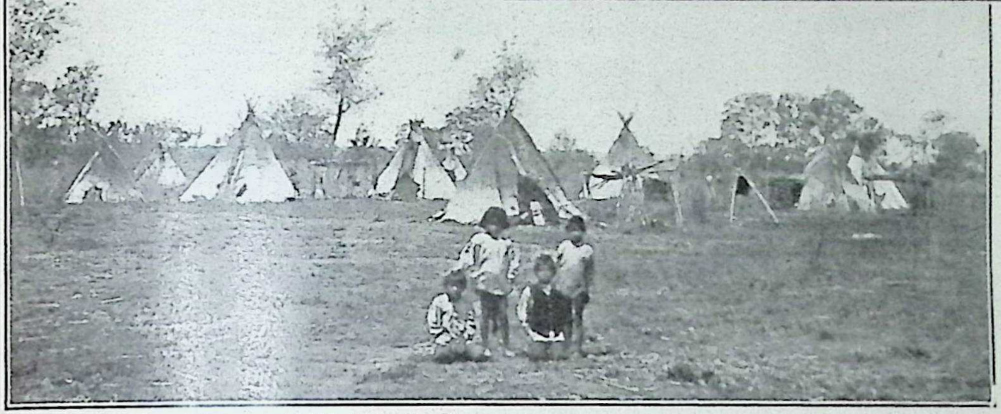


FIG. 200. *A village of Wichita Indians. These families roam from place to place over the plains.*

As we well know, Indians formerly lived throughout the United States, and even now may be found scattered through the eastern states. The principal home of the Indian is, however, on the great western plains and plateaus. (See Fig. 200.) Here he lives on the Indian reservations a free, wandering, or *nomadic* life, getting a living in part from agriculture, but more from raising horses, cattle, and sheep. Some of the tribes also make blankets (see Fig. 202), baskets, bead work, or silver work, for sale to white people, and they often earn much money in this manner.

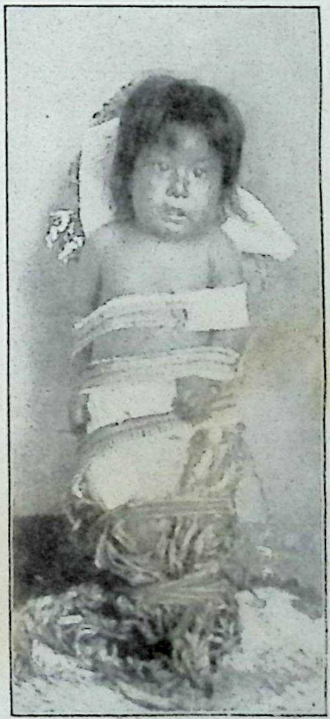


FIG. 201. *An Indian baby wrapped for traveling.*

Most of the Indians live in movable houses known as *tepees* (see Fig. 7) or in *wickiups*, because the climate is so dry that they cannot keep their stock in one place all the time. Hence they have to wander and cannot live in a permanent home. In New Mexico and Arizona there are many Indians who live in towns and are not nomadic, but cultivate crops often by means of irrigation. These Indians are known as *Pueblo* Indians and their towns are called *pueblos*. In ancient times there were very many pueblo towns in this region which are now deserted and in ruins. The people who occupied these ancient pueblos have disappeared, and the present Indians have no legends concerning them. Some of these ancient people lived in *cliff* houses built under overhanging cliffs where they could be easily defended from enemies. These cliff houses are also in ruins and are often visited. Many of them, however, contain relics that tell us a great deal about the people and their life. People who do not know them think that all Indians are bad Indians, because they are usually so described. There are, of course, bad Indians, as there are bad white men. As a rule, however, the Indians are very faithful to all who have won their gratitude or friendship.

Suggestions for Review

(1) Find out for whom Pike's Peak was named. (2) Find out how people traveled in this country before railroads were built. (3) Find out something about the Oregon Trail or the Santa Fé Trail. (4) Who were the first white men to cross the mountains from the Missouri River to the Columbia River? (5) Find out why cattle are marked or branded. (6) Study advertisements in the magazines and see what parts of this group of states are most advertised for their scenery. (7) Collect pictures from magazines showing the beauty of the Colorado Canyon and the Yellowstone Park. (8) Why do you suppose Leadville was so named? (9) Explain why the Colorado River has so few tributaries in Arizona. (10) Find out something about the Apache,. Moki, or Navajo Indians. (11) Why can people live out of doors so much in the plateau states? (12) Why is it well to carry water when traveling through this region? (13) Why are horses sometimes called the "ships of the plains"? (14) Find out about the use of snow plows on the railroads in winter. (15) Where and for what are snow sheds used?

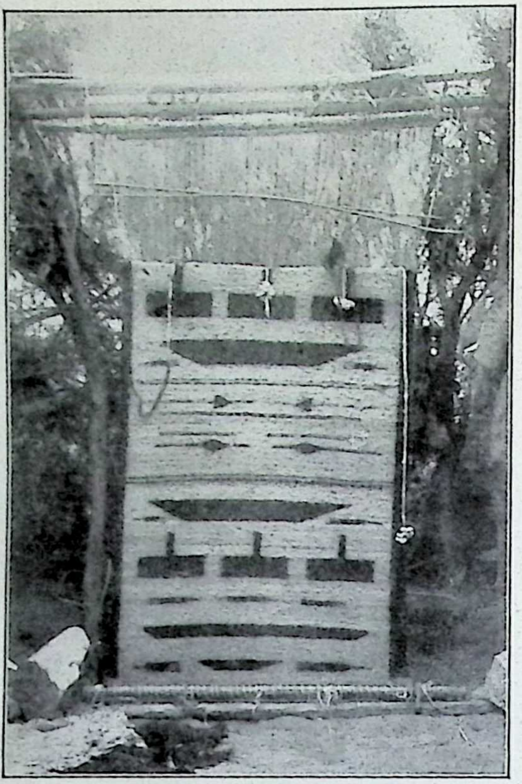


FIG. 202. *A Navajo Indian blanket in process of weaving.*

XXVIII. STATES OF THE PACIFIC COAST

STATE	*Abbreviation*	*Area in sq. miles*	*Population 1900*	*Chief City*	*Population 1900*	*Capital*
Washington	Wash.	69,127	518,103	Seattle	80,671	Olympia
Oregon	Ore.	96,699	413,536	Portland	90,426	Salem
California	Cal.	158,297	1,485,053	San Francisco	342,782	Sacramento

Importance of the Pacific States. The States bordering on the Pacific (see Fig 204) are important for their agricultural products, grazing, lumbering, and mining.

The western ranges of the Cordilleran Highland contain much gold and some silver and coal. It was the discovery

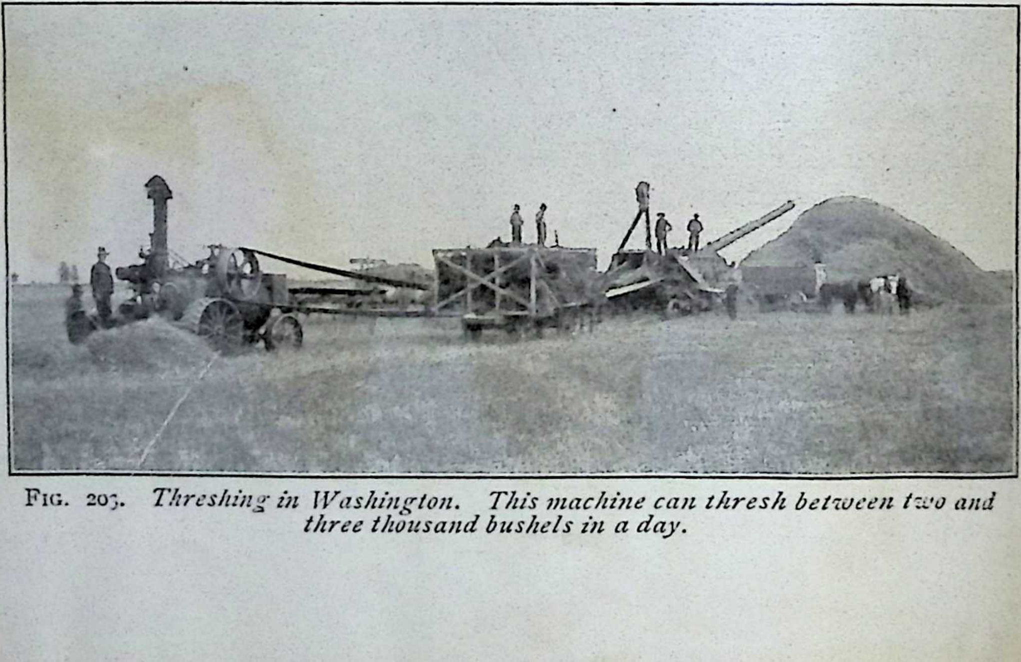


FIG. 203. *Threshing in Washington. This machine can thresh between two and three thousand bushels in a day.*

of gold in California in 1849 that brought the first rush of people from the East to this state. At that time there were no railroads. Hence many people reached California by sailing round the tip end of South America. San Francisco soon grew into a large city because of its position on the only good harbor in California. In 1906 the city was partially destroyed by earthquake and fire, but undoubtedly will soon be a great city again.

Surface. The great *Cordilleran Highland* occupies the larger part of the states of the Pacific Coast, and the region that is favorable for agriculture is small. The only lowlands are along the valleys of the Sacramento, San Joaquin, and Columbia rivers, and close to the southern coast; it is here, therefore, that the population is the most dense.

Owing to the few breaks in the coast line, there are no good harbors except in Puget Sound and San Francisco Bay. The harbors are so far apart that goods for exportation often have to be brought from long distances.

As the larger part of the commerce of this region is with the interior states of the Union, the passes over the mountains which can

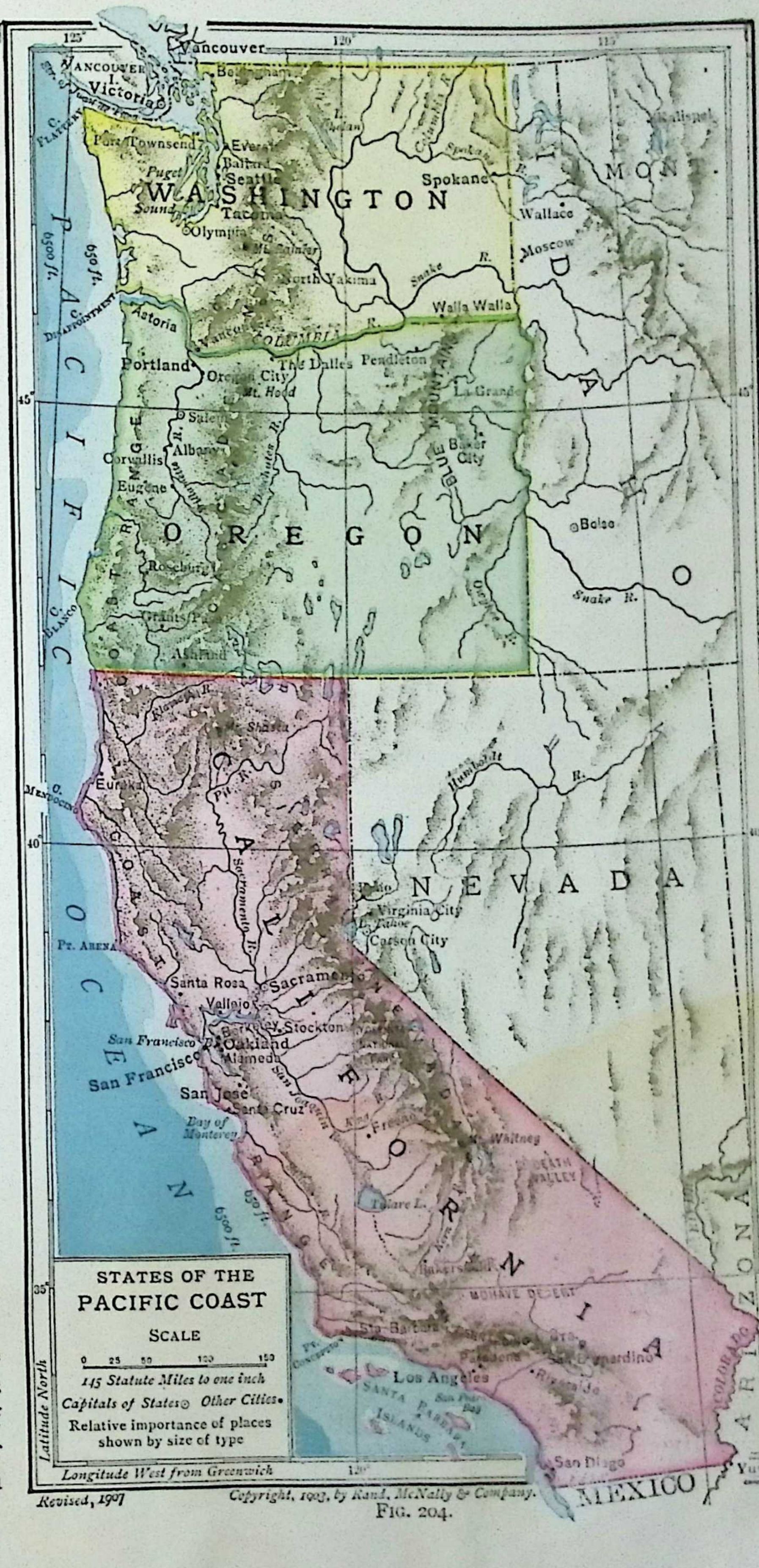


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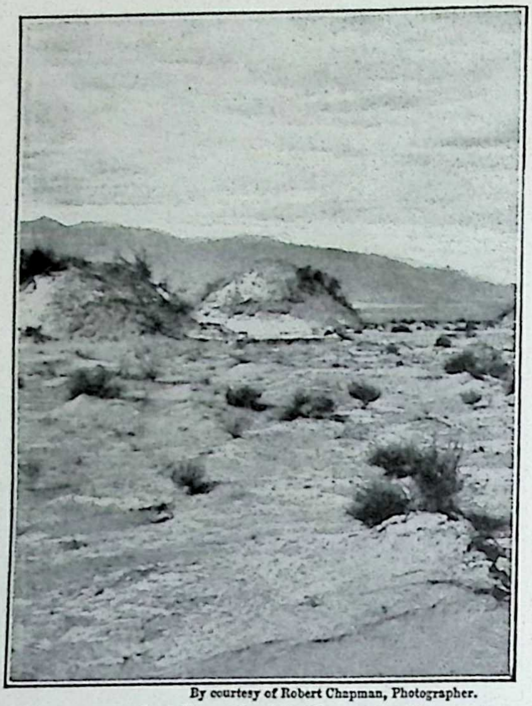
FIG. 204.

be used for railroads are very important as routes of commerce.

Climate. In Washington, Oregon, and northern California the rainfall is heavy, the larger part of it coming in the winter months. The summers are dry and warm. In southern California the rainfall is small. The temperature rarely falls to the freezing point, and in some places vegetation is scanty. (See Fig. 205.) Thus we find Hot Belt products in the south, and in the north great forests, which can grow only where moisture is abundant.

In the lowlands throughout the region the winters are mild, and there are no very severe and sudden changes of weather such as we found in the eastern states. This is due to the fact that the winds blow from the Pacific during a large part of the time, and thus the air brought to the land is warm in the winter season. The winters are so mild that flowers bloom out of doors in San Francisco the year round.



By courtesy of Robert Chapman, Photographer.

FIG. 205 *In Death Valley, California. Shifting sand dunes and stunted mesquite are characteristic features of this region.*

Agriculture. In Washington and Oregon, about the Columbia River, a great quantity of wheat is grown, so that Washington (see Fig. 203) is the fourth in importance of the wheat-growing states. California ranks next to Minnesota in the production of barley.

The Hot Belt products are raised in southern California in great quantities. In 1900 California produced more than twenty times as many boxes of oranges as Florida. California also leads the United States in the production of peaches, plums, prunes, pears, grapes, lemons, and figs, and recently of almonds and English walnuts.

In many places crops can be raised only by means of irrigation. (See Fig. 206.)

Grazing. The principal form of grazing is sheep raising, which is important in all the highland regions of these states, or in sections where the rainfall is insufficient to raise crops. Oregon is the sixth state in the Union in the raising of sheep.

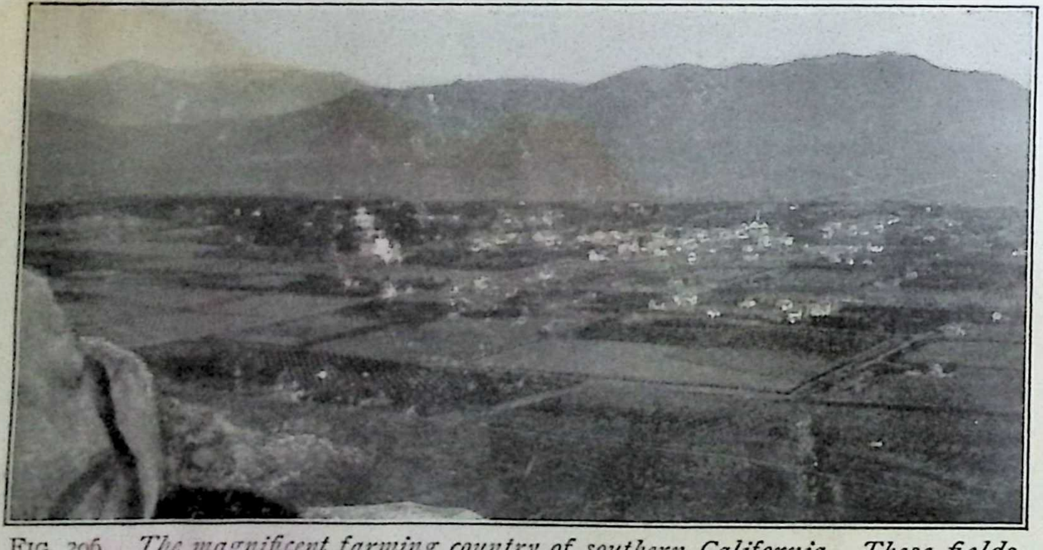


FIG. 206. *The magnificent farming country of southern California. These fields are irrigated, the land yielding two and three crops each year.*

Lumbering. The mountains of Oregon, Washington, and northern California are covered by magnificent forests of large and stately trees which are cut for lumber, so that lumbering is very important in these states. Indeed, Washington is the fifth state of the Union in the lumber industry.

The products of the forests are now sent to the eastern markets in large and valuable quantities.

Fishing. The *Columbia River* is one of the important fishing regions of the country. Salmon are found in large numbers in this river and go far inland into the fresh water at the spawning season. The salmon are caught as they go up the river and are largely canned for exportation. Washington ranks first in the United States in the canning of fish.

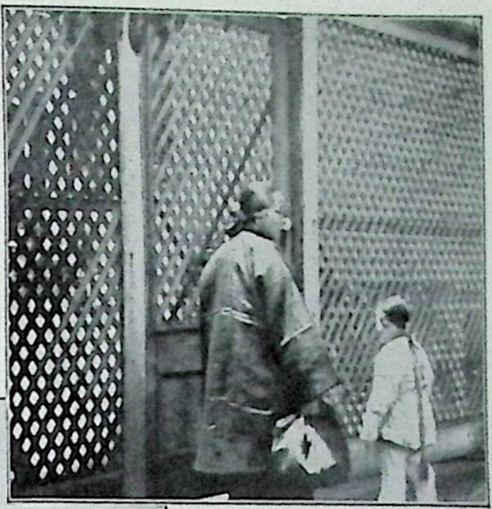


FIG. 207. *In Chinatown, San Francisco. A woman and child.*

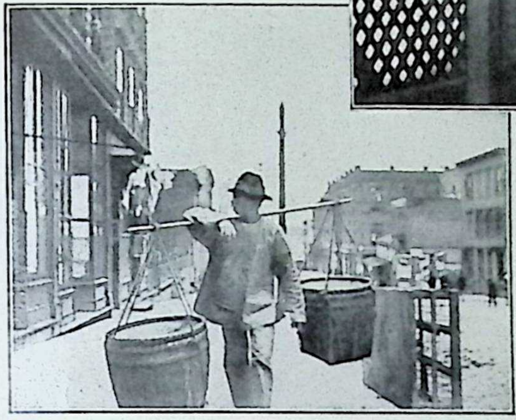


FIG. 208. *A Chinese fishmonger in California. The oriental custom of carrying is never laid aside.*

Mining. Gold and silver are mined in all the Pacific states (see Fig. 189), but California leads in mining, as the state ranks next to Colorado in the production of gold. Gold was first found in the gravel of the river beds, and was secured by washing the gravel in a pan until the gold sank to the bottom, and the gravel and water could be thrown away. Every man who could get control of a small area of land upon which he could mine had as good a chance as any one else to get gold enough to make him rich, and fortunes were made by this kind of mining.

Now the gold is mostly found in the solid rocks, which must be dug up, ground into dust, and then the gold removed from the dust. This sort of mining is expensive, and mining companies have now taken the place of individual miners.

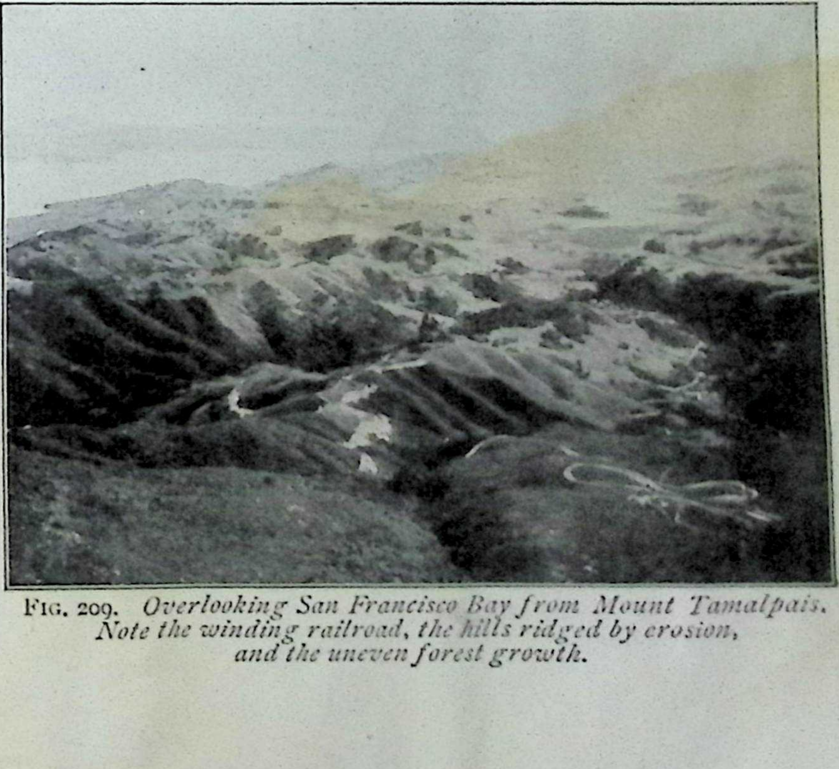


FIG. 209. *Overlooking San Francisco Bay from Mount Tamalpais. Note the winding railroad, the hills ridged by erosion, and the uneven forest growth.*

Manufacturing. There is a large and increasing amount of manufacturing in these states, partly devoted to the products of the region and partly to raw products imported for this purpose.

San Francisco, Cal., was the largest city of the Pacific Coast until the recent great earthquake and led in manufacturing, especially in refining sugar and molasses, which are imported from the Hawaiian Islands in the Pacific Ocean. The city is now being rebuilt rapidly.

San Francisco contains many *Chinese* who have come from Asia to this country. (See Figs. 207 and 208.) They belong to the yellow race, are short in stature, wear their hair in a queue or braid, and live in a part of the city by themselves.

Portland, Ore., is also important for manufacturing, and its principal products are finished lumber and preserved meat. *Seattle* and *Tacoma*, Wash., produce large quantities of finished lumber.

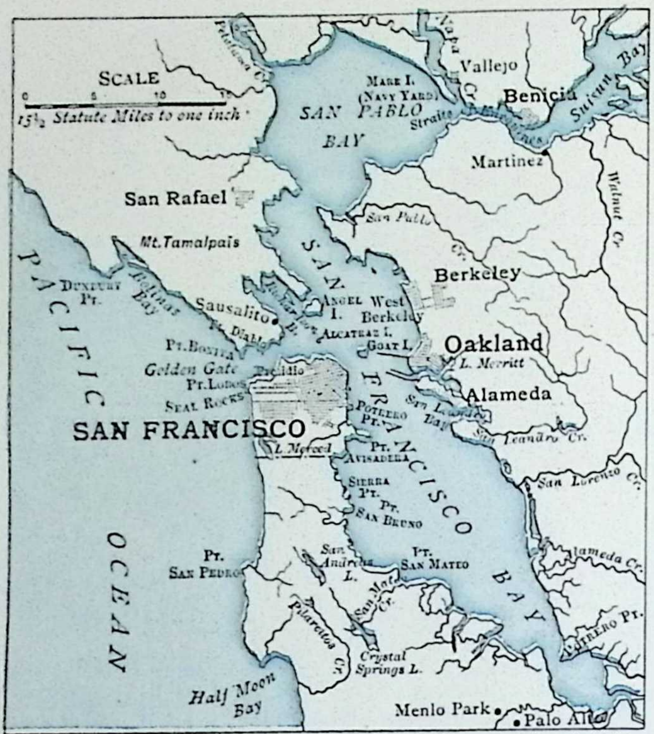


FIG. 210. *A map of San Francisco Bay and vicinity. This is one of the best protected harbors of the world. (See Fig. 209.)*

Los Angeles and *Sacramento*, Cal., are now rapidly increasing in their manufacturing importance, especially in flour-mill products. Los Angeles is noteworthy as being the city in the United States which grew the most rapidly in size between 1890 and 1900.

Commerce. The leading *seaports* of the Pacific Coast are *San Francisco* (see Fig. 210), *Seattle*, *Portland*, and *Tacoma*. San Francisco has one of the most beautiful and spacious harbors of the world. (See Figs. 114, 209, 210, and 211.) Long the chief center for trade with the east coast of Asia, it is hoped that it will soon recover from the disaster of 1906. Portland, 100 miles from the mouth of the Columbia (see Fig. 212), also has a large foreign trade.

The commerce of these two cities is growing rapidly, in part because of their available harbors and nearness to areas producing goods for commerce, and in part because they are connected with all the rest of the United States by several great railroads, most of which run through trains between Chicago, Ill., and the Pacific Coast. The other leading port is *Seattle*, Wash., which is the nearest city to Alaska, and which, therefore, is the leading port for Alaskan commerce.

Scenery. The states of the Pacific Coast, like the neighboring plateau states, are especially famous for the beauty and grandeur of their scenery. The *Sierra Nevada Mountains* in California are full of beautiful river valleys and canyons in which there is some grand and little known scenery. The *Yosemite Valley* in the central Sierras is world-famed for its beauty because of its many nearly vertical cliffs, which rise more than 3,000 feet above the valley, and for its waterfalls, one of which leaps 1,500 feet to the valley below. (See Fig. 213.)

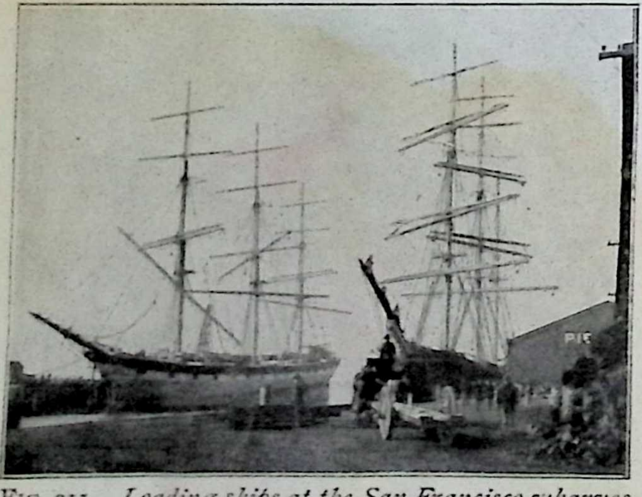


FIG. 211. *Loading ships at the San Francisco wharves for trade with Asia and the islands of the Pacific.*

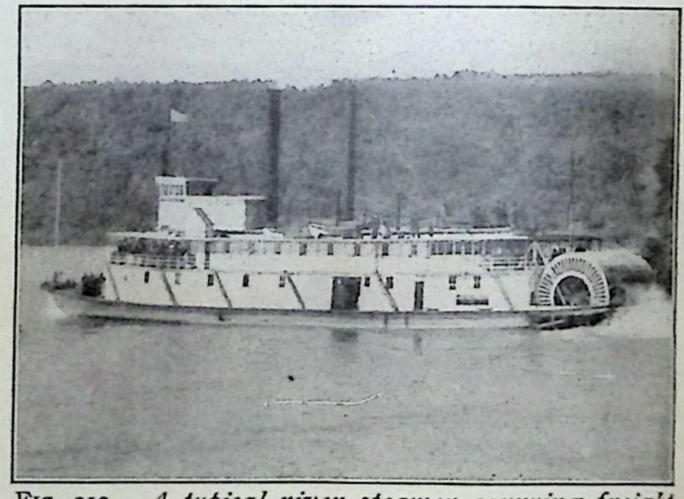


FIG. 212. *A typical river steamer carrying freight up the Columbia River.*

Mount Whitney, in the southern Sierras, is the highest mountain in the United States (not including Alaska), and *Mount Shasta* in northern California, *Mount Hood* in Oregon, and *Mount Rainier* in Washington, are also very high and very grand.

One of the most famous objects of beauty in California is the series of groves of *Big Trees* which are found scattered along the western side of the Sierras. Some of these trees are over 250 feet high and nearly 100 feet in circumference. They are the largest trees in the world and are probably the oldest living things in existence.

Suggestions for Review

(1) From the advertisements in the magazines find out what are the principal routes of travel to California. (2) Where is the Golden Gate? (3) Make a list of all the fruits from California that you can find at a grocery store. (4) Find out what you can about Chinatown in San Francisco. (5) Why should you think of the Chinese on the Fourth of July? (6) Find out the size of some of the Big Trees. (7) Why do the people of southern California live out of doors a great deal? (8) Name the principal seaports of the Pacific states and give the special advantages of each. (9) With what countries do these ports carry on their foreign trade?

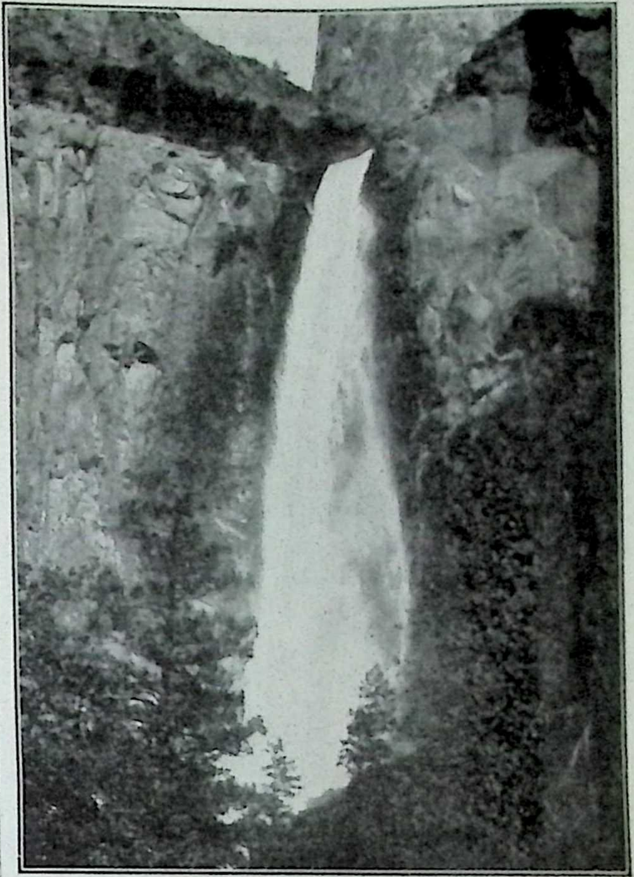


FIG. 213. *Bridal Veil Fall in the Yosemite Valley, which leaps from a height of 630 feet.*

XXIX. UNITED STATES DEPENDENCIES

The Most Important Dependencies. In addition to the states and territories already considered, the United States owns a number of dependencies in other parts of the world. The most important is the Territory of Alaska in northwestern North America. The Territory of Hawaii in the Pacific Ocean, about one-third of the way from San Francisco to Australia, Porto Rico, an island in the West Indies, and the Philippines, a large group of islands near the southeast coast of Asia, also are important.

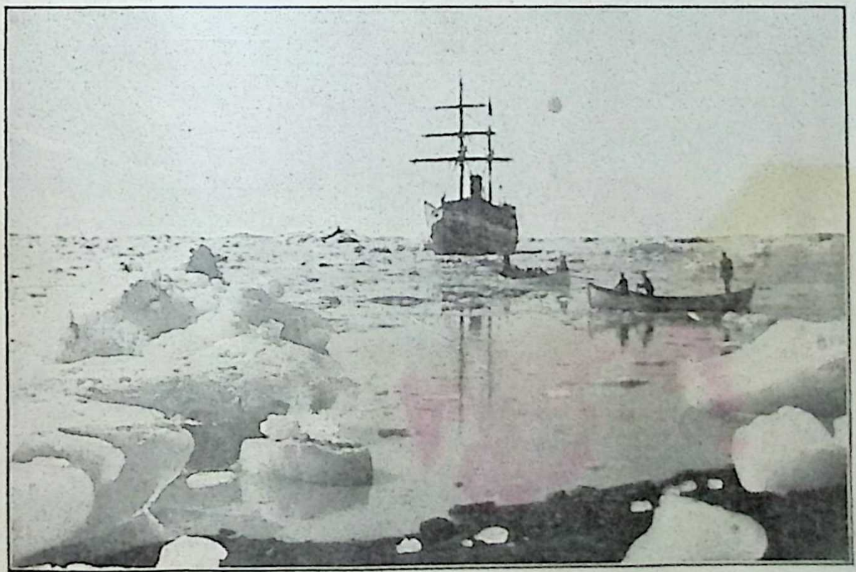
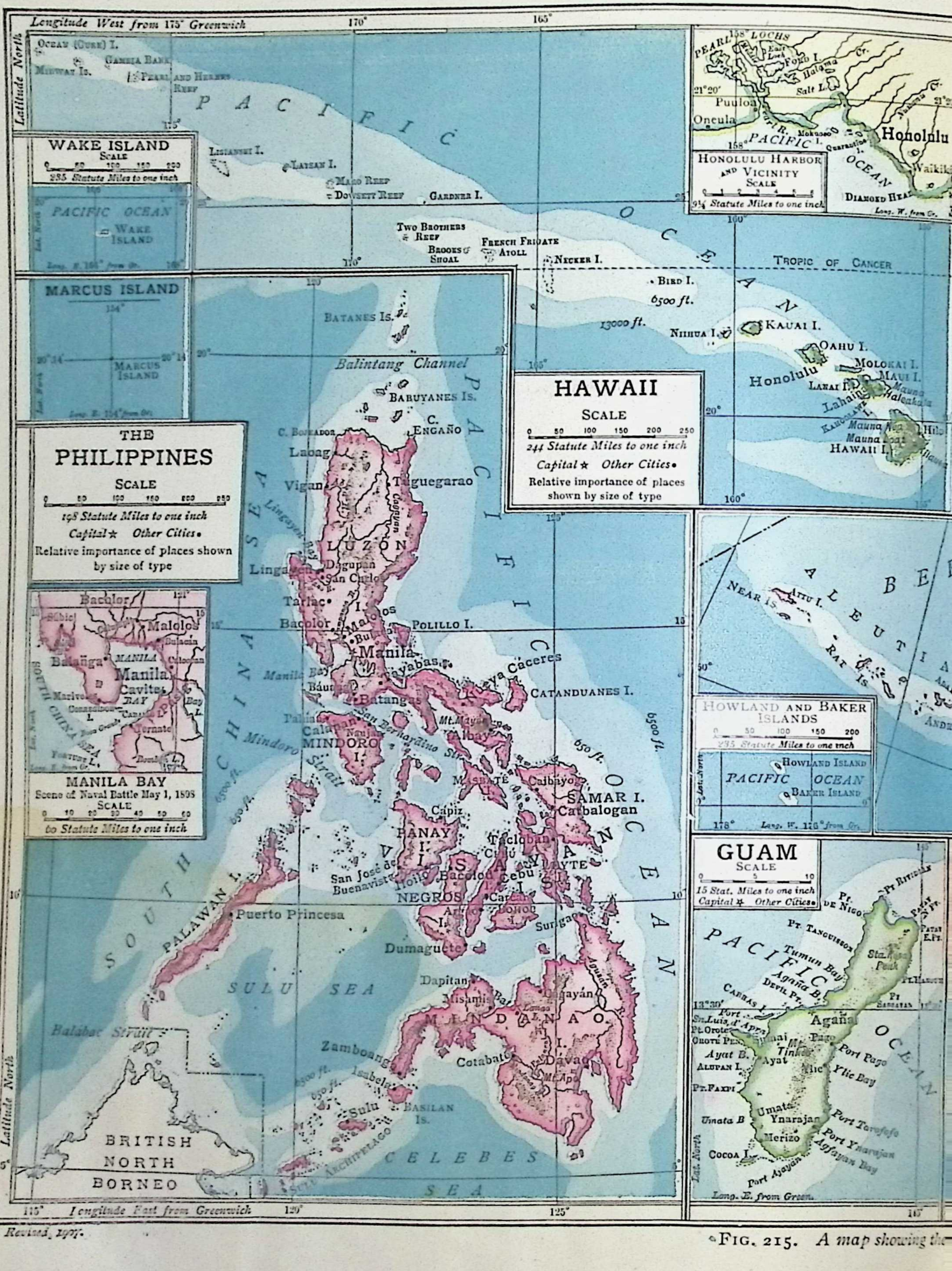
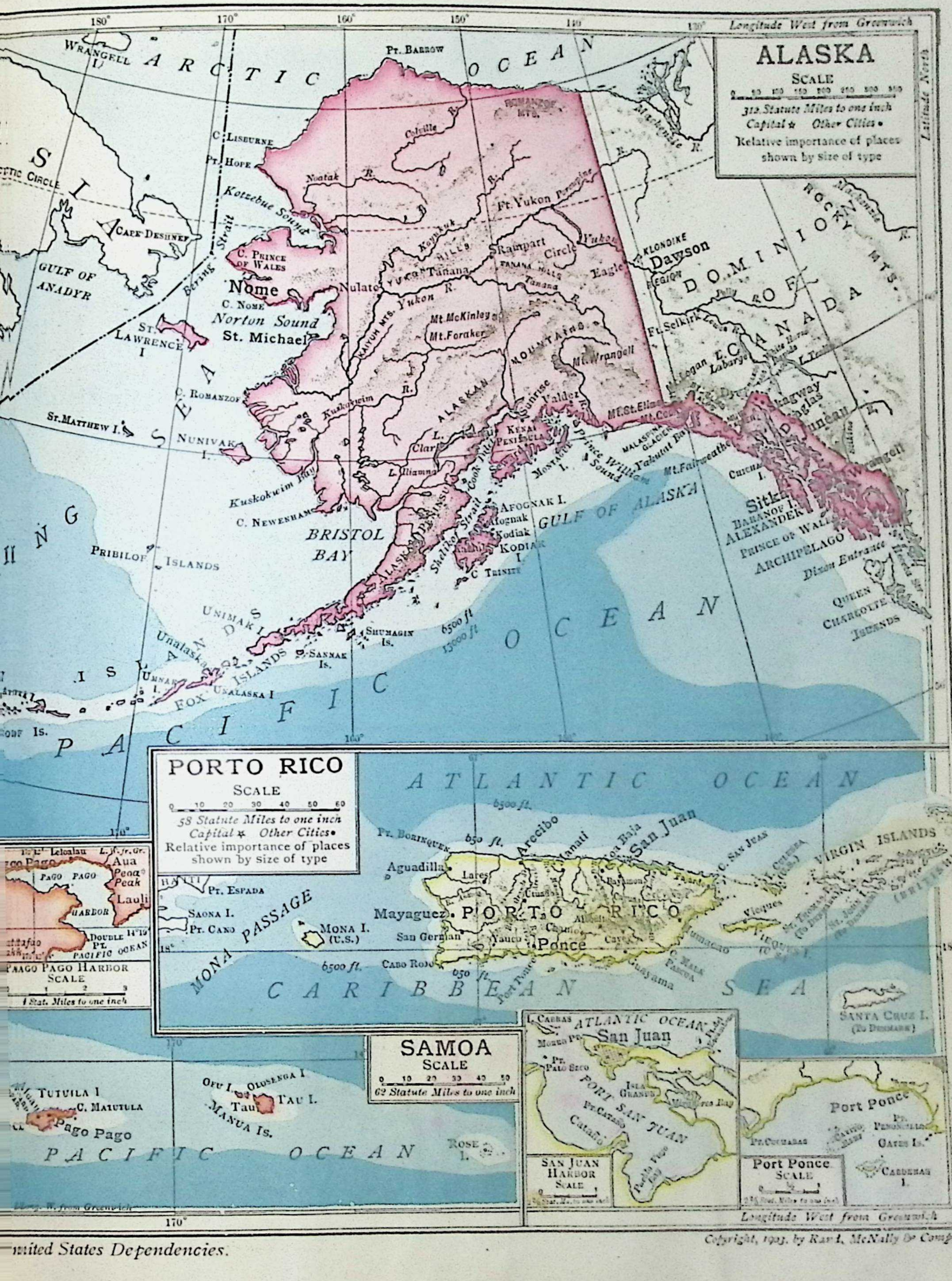


FIG. 214. *The ice-covered seas bordering Alaska. These pieces of ice are broken from icebergs and glaciers.*



Revised, 1917.

FIG. 215. A map showing the



nited States Dependencies.

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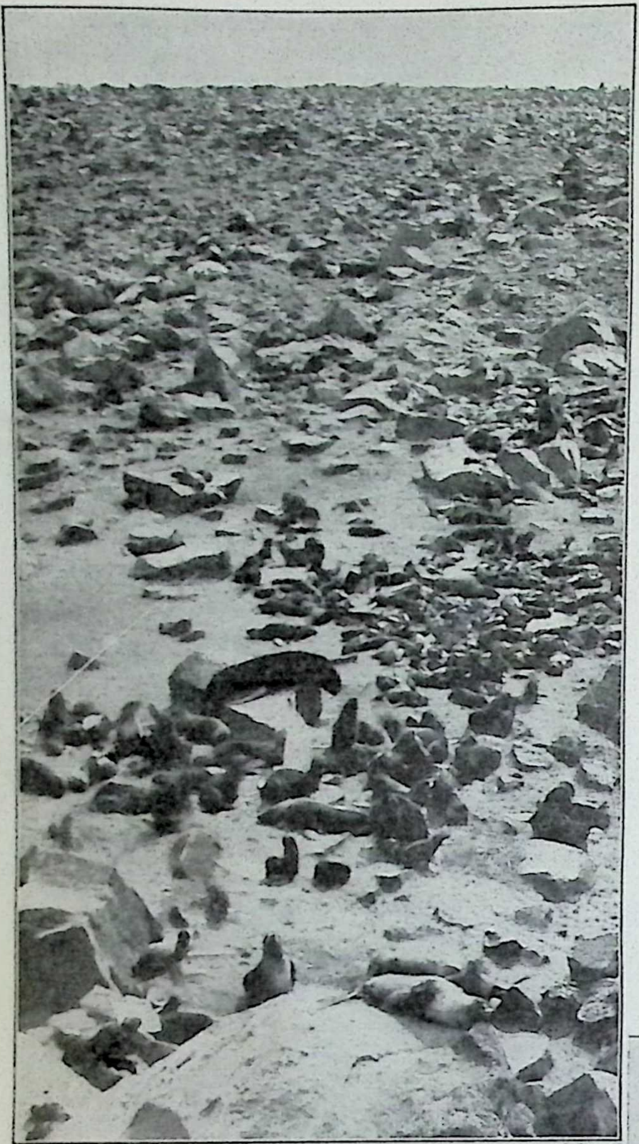

FIG. 216. *A colony of seals in Alaska. Seal skins are very valuable and are becoming rarer each year.*

Alaska. Alaska is a country more than twice the size of Texas and lies in the Cold Cap of North America. It was bought from Russia in 1867, but owing to the climate and the difficulty of traveling, it is as yet only partly explored. It is, however, a valuable region because of its mineral wealth, being especially famous for *gold-mining*, which is carried on extensively near *Juneau* and at *Nome*. The capital, formerly at Sitka, was transferred to Juneau in 1906. A few years ago people flocked to the new gold region of the *Klondike* on the *Yukon River*, but this particular region lies in Canada.

Besides the gold, Alaska is of interest for two other reasons—for its many *glaciers* and ice-covered seas (see Fig. 214) and for the *seals* (see Fig. 216) caught off the coast. Vessels from Seattle go to the very edge of some of the glaciers with ease and safety, and hence the region is visited by many hundreds of people each summer. The seals are caught for their fur, which is very valuable for winter wear.

The Alaskan glaciers are formed from the snow that falls on the cold and lofty mountains. As the snow is pressed into ice, it slowly moves down the slopes, filling the valleys partly full of ice. The glaciers may melt away on the land or they may move on until they meet the sea, when they break up and float away as icebergs.

Alaska is also interesting for containing two great mountains, *Mount St. Elias*, long considered the highest mountain in the United States or its dependencies, and *Mount McKinley*, now known to be the highest.

The native people of Alaska are mostly Indians who get their living by hunting and fishing. Tribes of Eskimos are also found along the northern coast.

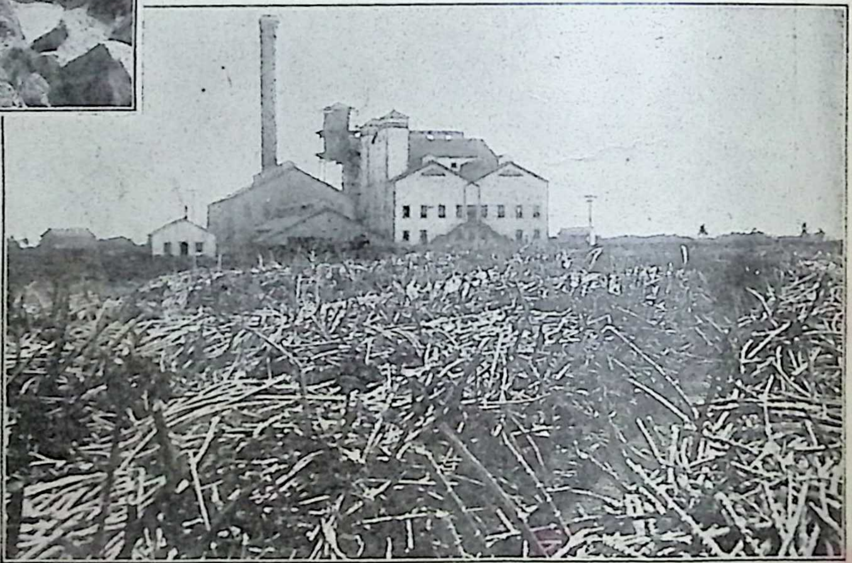

FIG. 217. *Sugar mills on an Hawaiian plantation, with stacks of sugar cane ready for manufacture.*

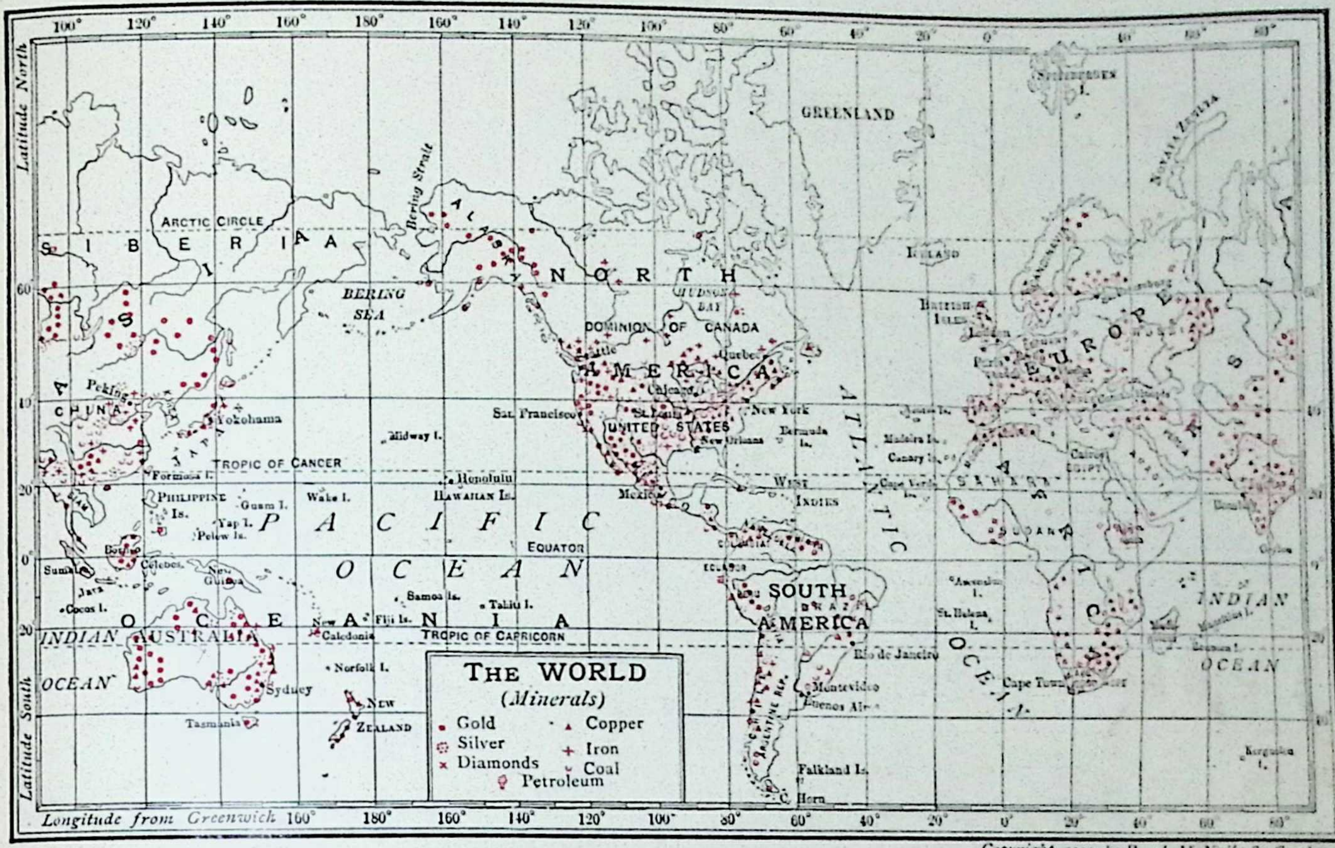

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FIG. 218. *A Map of the World, Showing Areas of Mineral Wealth.*

Hawaii. About two thousand miles southwest of San Francisco, far out in the Pacific, lies an isolated group of eight inhabited islands and several rocky islets or shoals known as *Hawaii.* The islands are the result of volcanic eruptions, and contain many active volcanoes, of which *Kilauea* is the largest and best known. (See Fig. 215.) These islands came into the possession of the United States in 1898, and form a very valuable territory which is governed like New Mexico or Arizona. They serve as a way station for vessels crossing the Pacific and are especially valuable because of their large sugar product (see Fig. 217), much of which is brought to California for refining. Other important crops which show the Hot Belt character of the climate are rice (see Fig. 220), coffee, bananas, and pineapples. Although the islands lie in the Hot Belt the air is cooled by ocean breezes, which make the climate mild and delightful.

The people of Hawaii are in part native Hawaiians, who are similar to natives of many other of the Pacific islands. They are brown people with straight black hair, and are about the size of most white men. Besides the Hawaiians, who are an educated and advanced race, there are many white people in the islands, and a still larger number of Chinese and Japanese. The Japanese belong to the yellow race, of whom we shall learn more later in this book.

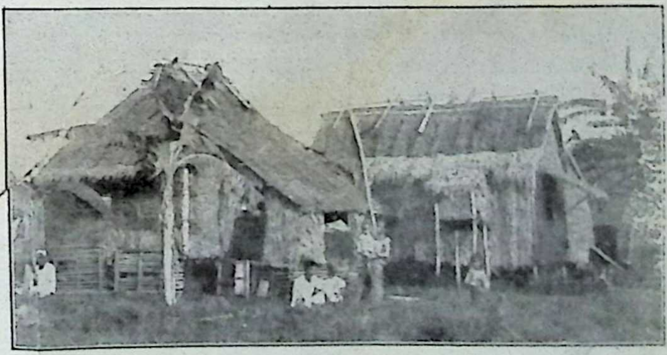

FIG. 219. *A native house in Manila built of wood and bamboo and covered with a straw thatch for a roof.*

The leading port, which is a calling point for most trans-Pacific vessels, is *Honolulu*, the *capital of the islands*. This city is now connected with the United States by an ocean cable.

The Philippines. Southeast of Asia lies a large group of islands known as the *Philippines*, which came into possession of the United States at the close of the war with Spain in 1898. (See Fig. 215.) These islands are largely peopled with natives, who are of the light brown Malay race, and who have black hair, black eyes, prominent cheek bones, and are a few inches shorter than white people. There is also a large number of Chinese and of white people in the islands. The islands contain much mineral wealth, especially gold, coal, lead, iron, and silver.

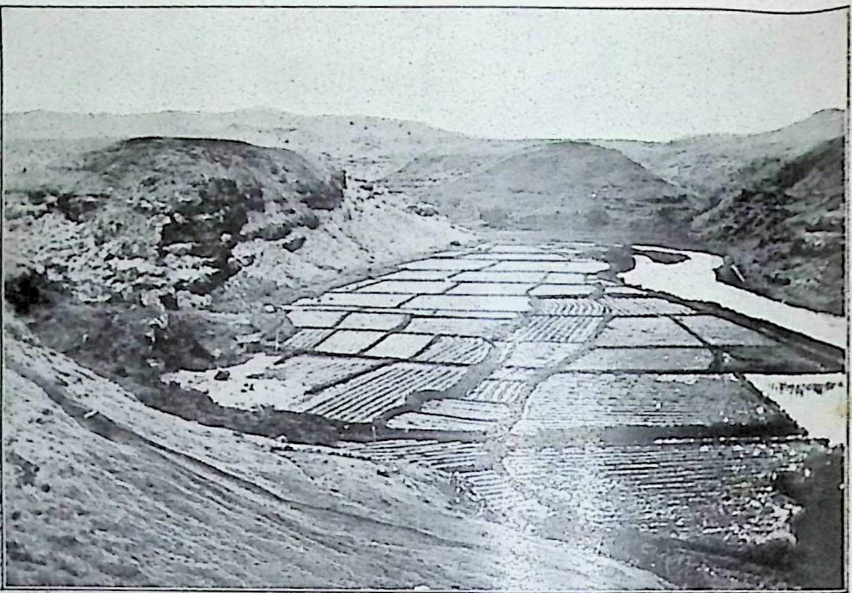

FIG. 220. *Rice fields in the Hawaiian Islands. Water from the river continually keeps these fields half under water.*

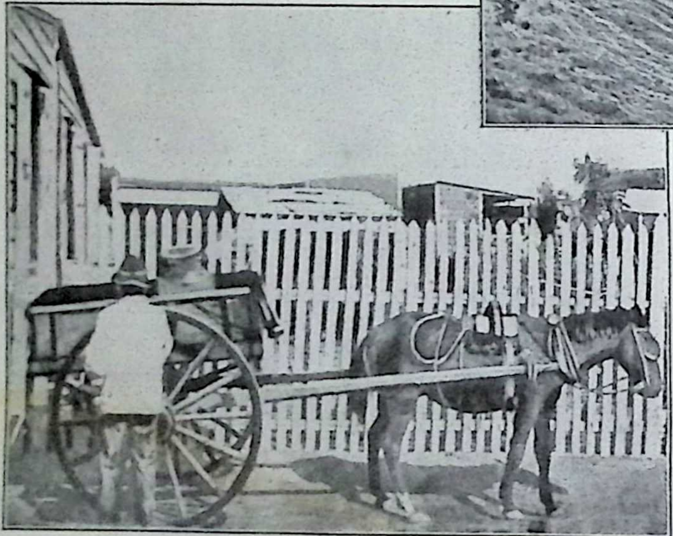

FIG. 221. *A Porto Rican milk peddler.*

The islands are also very valuable because of the hemp, coffee, sugar, tobacco, and indigo that are raised there, and a large part of which is carried in trade to the United States.

Manila, the capital and chief city, was for a long time the center of the Spanish government in the islands. (See Fig. 219.)

Other Pacific Islands. Scattered about the Pacific there are several other small islands belonging to the United States, of which Guam, Midway, Marcus, and Wake, and Tutuila in the Samoan group in the Southern Hemisphere, are the most important. These islands are valuable as coaling stations for vessels, especially government vessels, crossing the Pacific. The United States is fortunate in possessing the harbor of *Pago-Pago* in Tutuila, which is the most important harbor of the Samoan group.

Porto Rico. Porto Rico is a large island in the West Indies, southeast of North America, which, like the Philippines, came into the possession of the United States after the Spanish War in 1898. (See Fig. 215.) The island is about *three times as large as the state of Rhode Island* and lies in the Hot Belt. The average daily temperature is that of a hot July day in the eastern United States, and the nights are but little cooler than the days. As a result the crops are similar to those of Hawaii.

The principal products are coffee, sugar cane, and tobacco. Bananas, pineapples, and oranges are also raised, but not in sufficient quantities to be important in commerce.

The principal cities, which are also seaports, are *San Juan* and *Ponce*. (See Fig. 215.)

Weekly steamers run between the island and New York City, and there is also cable connection.

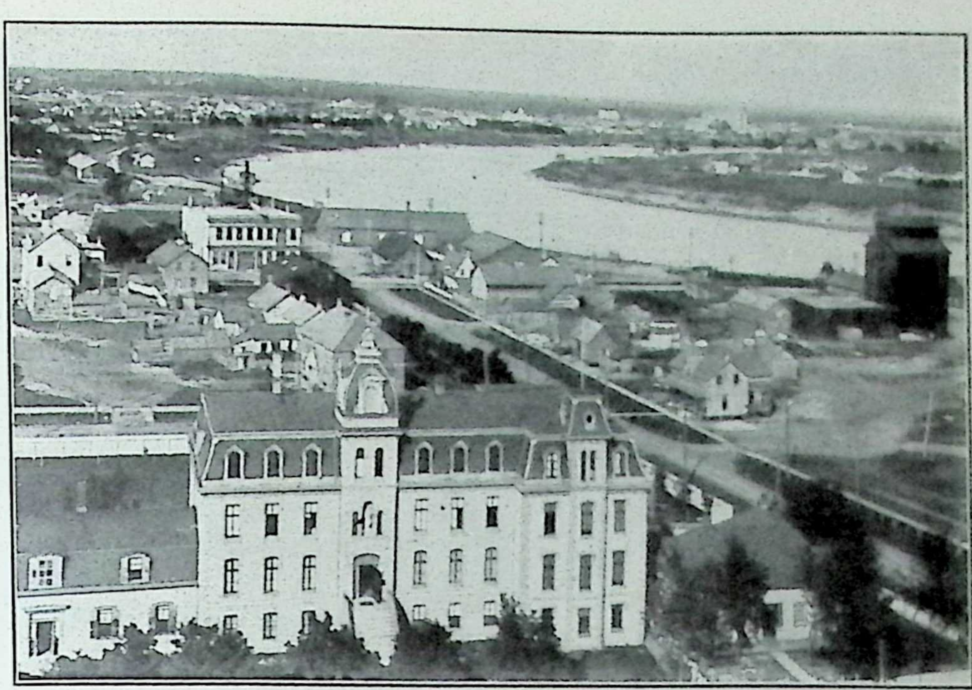

FIG. 222. *The city of Winnipeg, Manitoba, Canada. This city is a distributing point for northwestern Canada.*

Suggestions for Review

(1) Why can Alaska only be reached from the United States by steamer? (2) Why are the summers short in Alaska? (3) What do the glaciers tell you about the climate of Alaska? (4) Find out the names of some of the great glaciers. (5) Can you tell from its name when Mount McKinley was discovered? (6) Find out all you can about the fur seals. (7) What kind of houses would you expect to find in Hawaii? (8) What is manila paper, and why is it so named? (9) Find out why hemp and indigo are valuable. (10) What kind of clothes would you expect the people to wear in Porto Rico? (11) Compare the coasts of Alaska and California.

XXX. COUNTRIES OF NORTHERN NORTH AMERICA

The Countries of Northern North America. Northern North America includes the Dominion of Canada, Newfoundland and Labrador, and the large island of Greenland. The Dominion of Canada, together with Newfoundland and Labrador, belong to the United Kingdom. Greenland belongs to Denmark, a small kingdom in northern Europe. Together these great countries stretch across North America from ocean to ocean. (See Fig. 224.) Great plains occupy a large part of the country and extend west to the broad Cordilleran Highland, which borders the whole length of the coast.

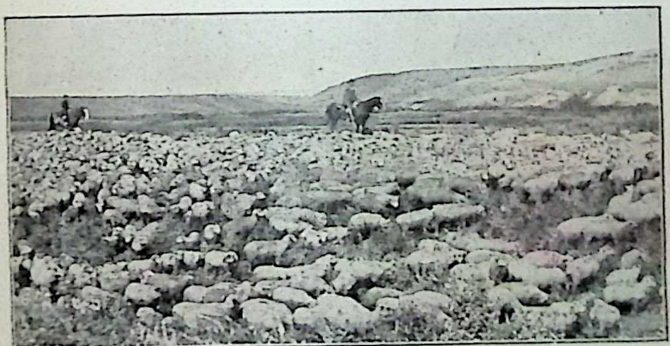

FIG. 223. *Sheep-ranching in Canada. The rolling country of Canada affords the best of pasturage.*

Products of Soils and Mines. As we have already seen, these countries lie in the colder portion of North America. Hence we should naturally expect that their more northern parts would be too cold for agriculture. But the region just north of the Great Lakes and St. Lawrence River is really farther south than some parts of the United States. In this region, therefore, agriculture, horticulture, and dairying are important and successful industries, and it is here that we find the densest population. The population is also increasing rapidly in the vicinity of *Winnipeg* (see Fig. 222), in the province of Manitoba, where enormous crops of wheat are raised, just as they are to the south in the Dakotas.

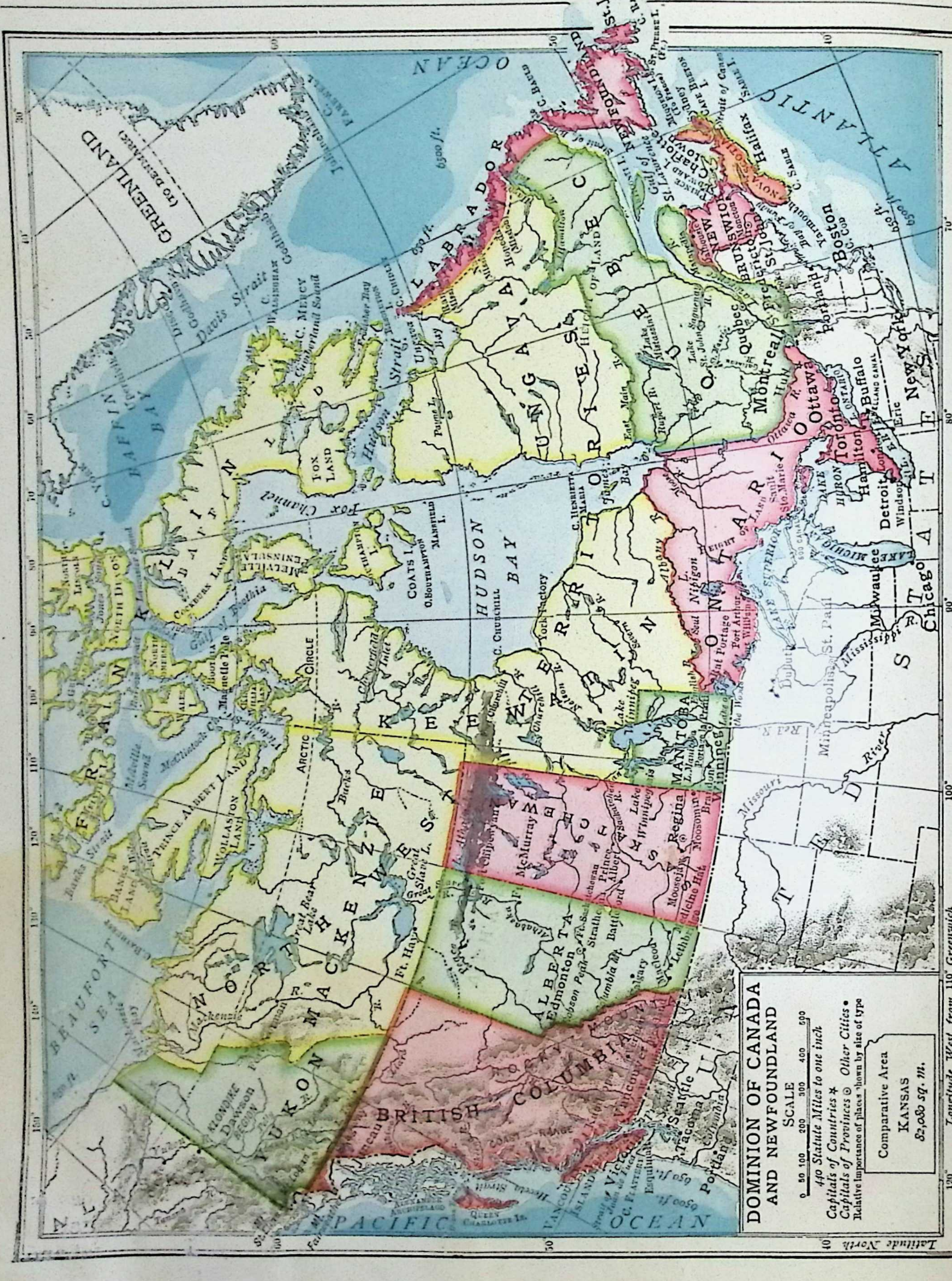

FIG. 224.

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Revised, 1907.

On the western plains grazing is carried on extensively. (See Figs. 223 and 225.) We thus see that the occupations found in the United States extend into Canada as far north as the climate will permit. Wheat, which is a crop that can grow where the winters are cold, can be easily raised in the valley of the Saskatchewan. Nova Scotia also is an agricultural region.

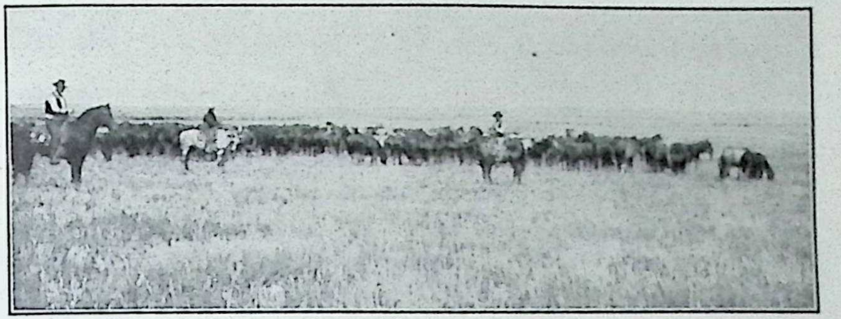


FIG. 225. *A round-up of horses on the Canadian prairie.*

North of the agricultural area lies a great forest extending to a line that can be drawn from the middle of Hudson Bay to the mouth of the Mackenzie River. Northeast of this line no trees can grow, and the region is known as the *Barren Land*, or because of its many bushes, the "Land of Little Sticks." This northern forest is full of wild animals, and is a great lumber region, but it is as yet little explored. Canada produces quantities of gold, and much coal, especially in British Columbia and Nova Scotia.

Manufactures. The provinces of Ontario and Quebec are important manufacturing regions. Lumber, wood pulp for paper-making, boots and shoes, finished leather, foundry products, refined sugar, and railway carriages are the principal products.

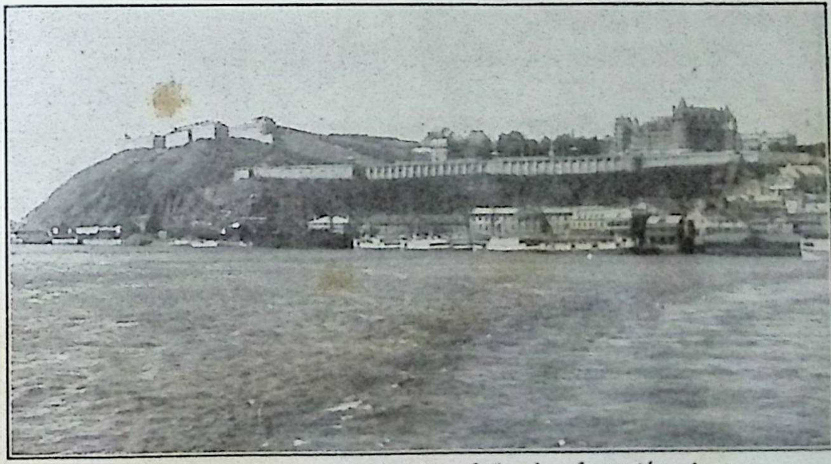


FIG. 226. *A view of the city of Quebec from the river.*

Cities. The largest cities are *Montreal* and *Quebec* in the province of Quebec (see Fig. 226), *Toronto* and *Ottawa* in the province of Ontario, *Winnipeg* in Manitoba, and *Vancouver* in British Columbia.

Montreal is at the head of oceanic navigation on the St. Lawrence River, and has an important trade with Europe in the summer when the river and Great Lakes are open. It is the largest city, with a population, according to the census of 1901, of 267,730. Quebec is an old town of great historic interest, but not important commercially. Toronto, on Lake Ontario, is the second largest city, with a population of 208,040. Vancouver has a large oceanic commerce with Asia, and, like Portland and San Francisco, is connected with the larger cities of the east by important transcontinental railways.

Ottawa is the seat of the Dominion Government, that is, the *capital of the Dominion.*

The best harbor is at *Halifax*, which is also the chief naval coaling station for the United Kingdom in the Western Hemisphere.

People. Besides the English-speaking people, the provinces along the St. Lawrence River contain many people who are descended from the early French settlers and who speak the French language. Many Indians are also found in the different provinces of the southwest and northwest.

The portions of Canada bordering the northern waters are inhabited by tribes of *Eskimos*, who live on meat, as no vegetables can grow in their country. They are fat and happy, as a rule, and seem to thrive in spite of the extreme cold which requires them to dress in skins and to live on meat. (See Fig. 119.) They are a very ingenious people, making many kinds of weapons and tools from bones and such pieces of driftwood as they can secure. The Eskimos are also found in Greenland, and all tribes speak practically the same language. (See Fig. 228.)

Scenery. The Dominion of Canada abounds in beautiful scenery. The mountains and valleys of Nova Scotia are visited yearly by many tourists. In the western provinces the mountains are grand and beautiful. Certain ranges in the southeastern part of British Columbia contain many glaciers and are becoming better known each year.

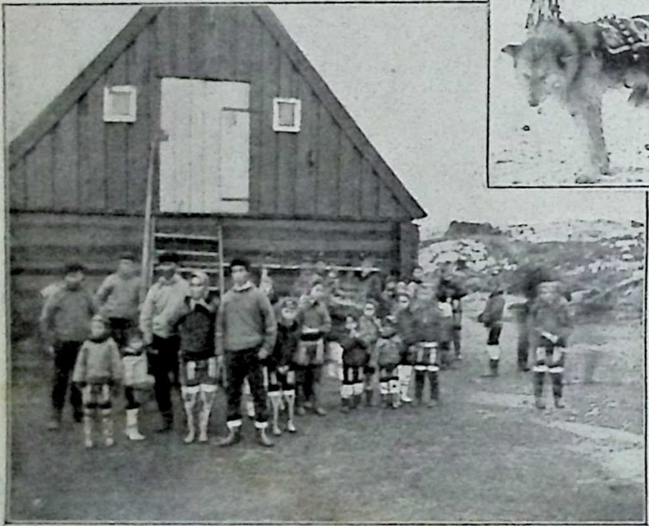


FIG. 228. *A group of Eskimos in front of the government storehouse at Godhavn, Greenland.*

Greenland. Greenland is a mountainous country (see Fig. 131), with most of its surface covered by deep glaciers. With the exception of a few Danes from Denmark, the people are largely Eskimos. Permanent settlements are only found along the milder southwestern coast. Explorers generally make one of these settlements their stopping place and supply station on their way to Arctic seas.

Suggestions for Review

(1) What state of the United States is most like the southern provinces of the Dominion of Canada? (2) Why are there so few railroads in Western Canada? (3) Find out all you can of interest about Montreal and Quebec. (4) Who was Champlain and what did he have to do with Lake Champlain? (5) With what countries of the Eastern Hemisphere is Vancouver directly connected by steamer? (6) At what place belonging to the United States do most of these steamers call? (7) By studying magazine and railroad advertisements find out all you can about Nova Scotia; all you can about the mountains of British Columbia. (8) Find out what Peary and Nansen did in Greenland.

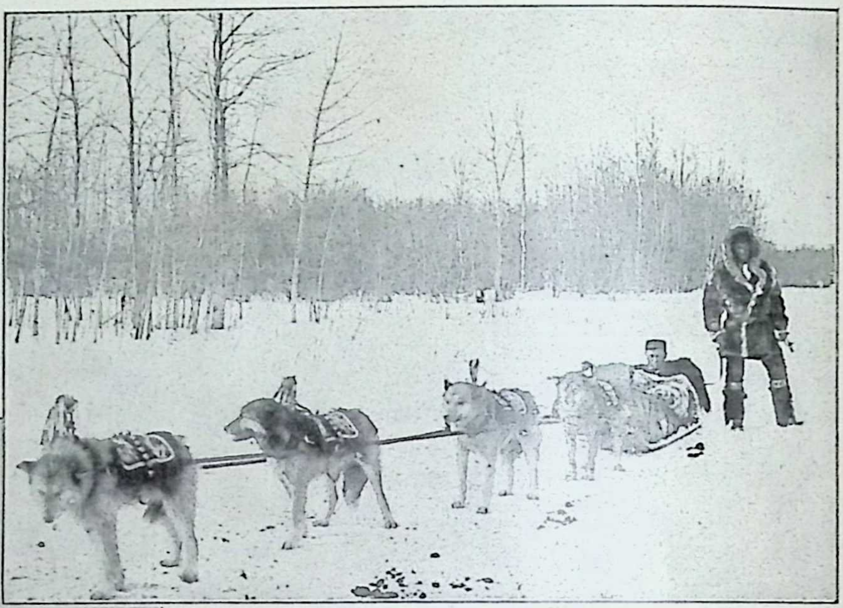


FIG. 227. *A dog train of "huskies" used in carrying furs from distant inland points along Hudson Bay. These dogs are half wolf and have a remarkable power of endurance.*

XXXI. COUNTRIES OF SOUTHERN NORTH AMERICA

Mexico. Mexico is the most important country of southern North America. It is about one-fourth as large as the United States, and has nearly one-sixth as many people in it. Mexico is made up of thirty states and territories, with the capital and

Dorthy's hats.

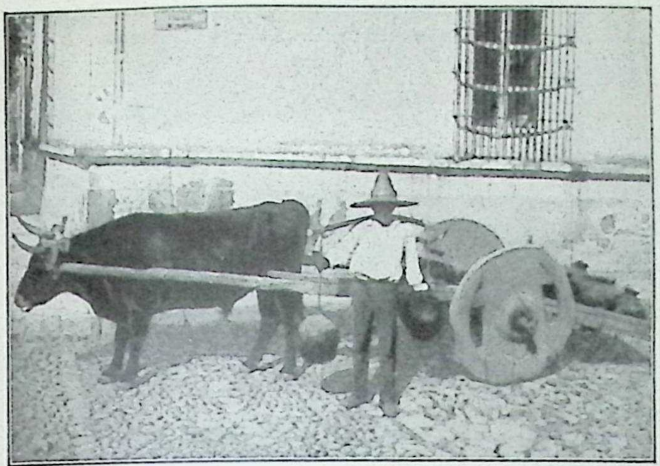


FIG. 229. *A Mexican milk peddler and cart.*

home of the President at the *City of Mexico*. Agriculture, grazing, manufacturing, and mining are the important industries.

Agriculture in Mexico. Though Mexico is in the Hot Belt it has a varied climate, because a large part of the region is a high, level plateau, rising from 6,000 to 8,000 feet above the sea. As the heat always decreases rapidly as one climbs a mountain or high plateau, the temperature in the Mexican plateau is very much like that of the Temperate Belt.

The coastal regions, however, have a tropical vegetation, and palms, rubber trees, and valuable cabinet-wood trees like rosewood and mahogany are abundant. This region also raises sugar cane, coffee, cacao (from the seeds of which chocolate and cocoa are made), the vanilla bean, and agaves.

On the plateaus the trees are similar to those of the temperate region, and great quantities of wheat are raised. Grazing of sheep and cattle, especially sheep, is also an important occupation in this region, where grass grows luxuriantly.

Mining. The mountains of Mexico, which rise in places above the plateau area, contain valuable minerals. The most important are gold and silver, which are mined in large quantities. Indeed they form the chief exports of the country.

Manufactures. Manufacturing is increasing in importance, largely owing to the work of people from the United States. The leading manufactures are distilled liquors, cotton, tobacco, leather, straw hats, and pottery.

Commerce. Mexico has a small trade in agricultural and manufactured products. Gold and silver, heniquen, coffee, tobacco, cabinet woods, hides, and vanilla are the leading exports.

The principal ports are *Acapulco*, *Mazatlan*, and *Manzanillo* on the Pacific, and *Tampico* and *Vera Cruz* on the Gulf coast. Vera Cruz is now the most active port, but Tampico is constantly increasing in importance. Acapulco has one of the *finest harbors in the world*.

People. When Mexico was discovered by the Spaniards it was inhabited by Indians, as was the rest of North America. The early Spanish settlers mingled with the

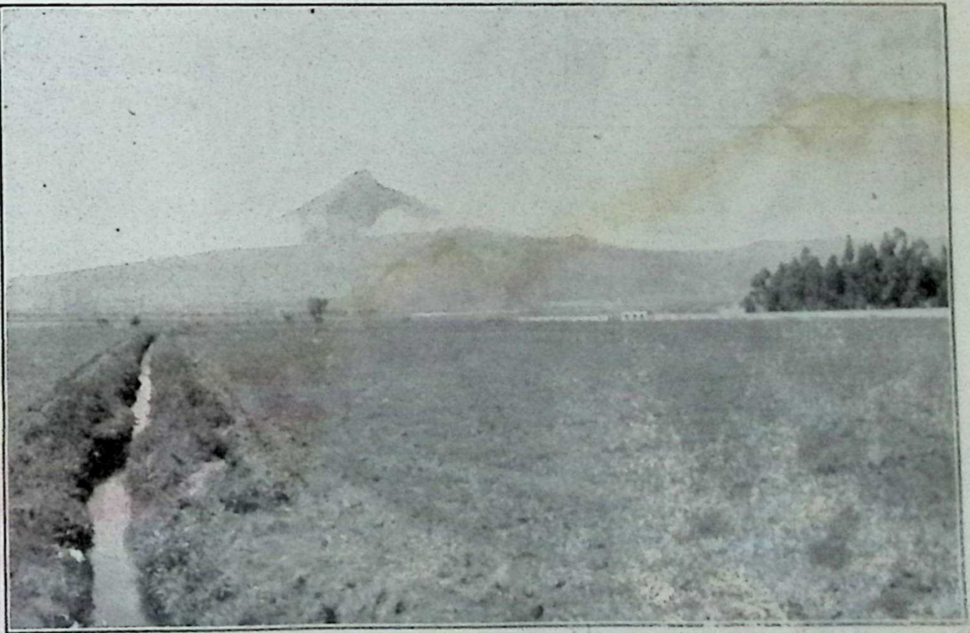
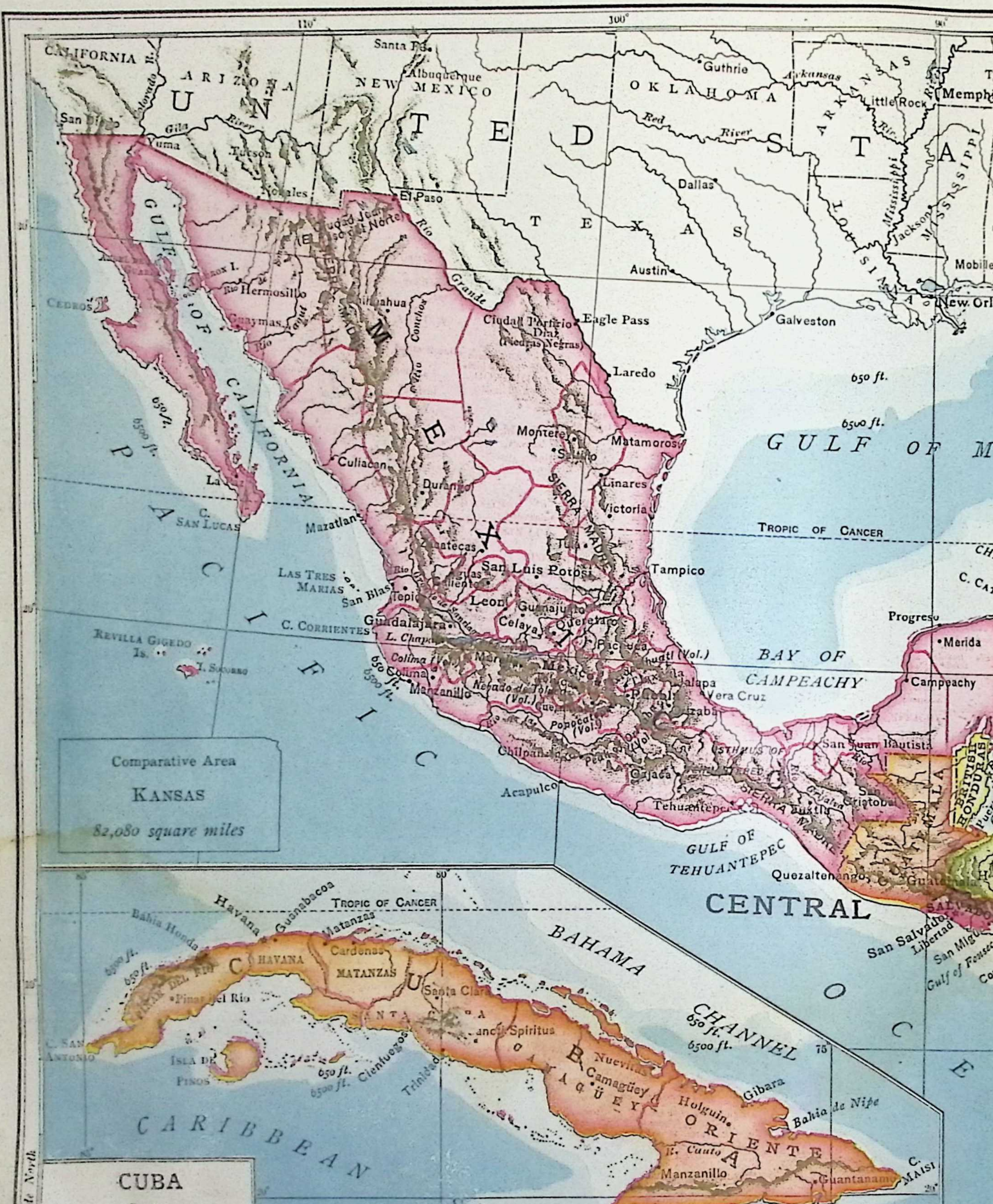
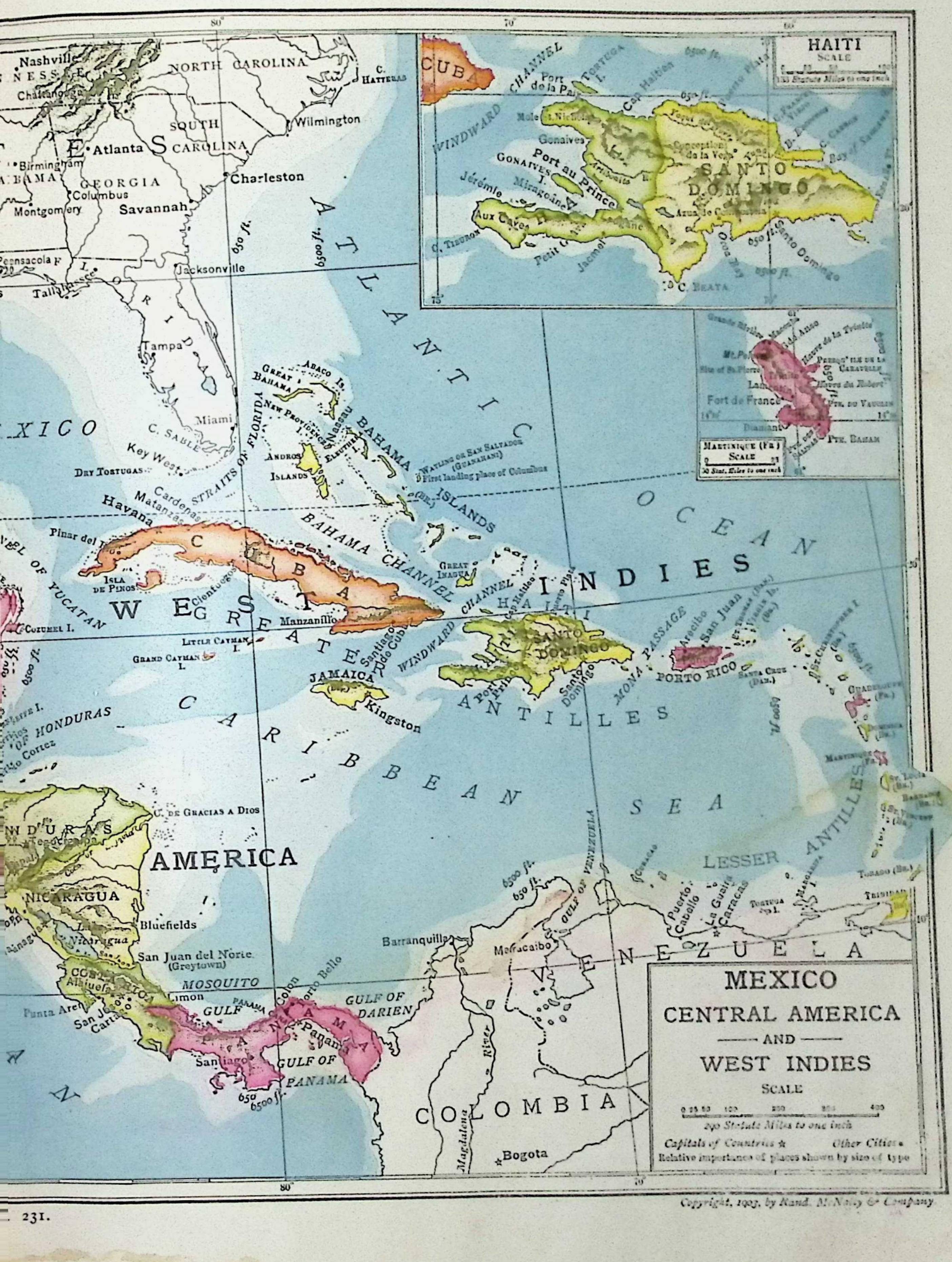


FIG. 230. *The magnificent volcano, Popocatepetl, as seen from the city of Puebla, Mexico.*


UNITED STATES
MEXICO
GULF OF CALIFORNIA
PACIFIC OCEAN
GULF OF MEXICO
BAY OF CAMPEACHY
GULF OF TEHUANTEPEC
CENTRAL
TROPIC OF CANCER
Comparative Area
KANSAS
82,080 square miles
CUBA
Scale.
Statute Miles to one inch
BAHAMA CHANNEL
CARIBBEAN SEA
Longitude West from Greenwich
Latitude North
Revised, 1907



231.

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native race, and their children were half-breeds. These half-breeds and their descendants are known as *Mexicans*. The country contains also many pure-blooded Indians, Spaniards, and some other people from Europe and the United States.

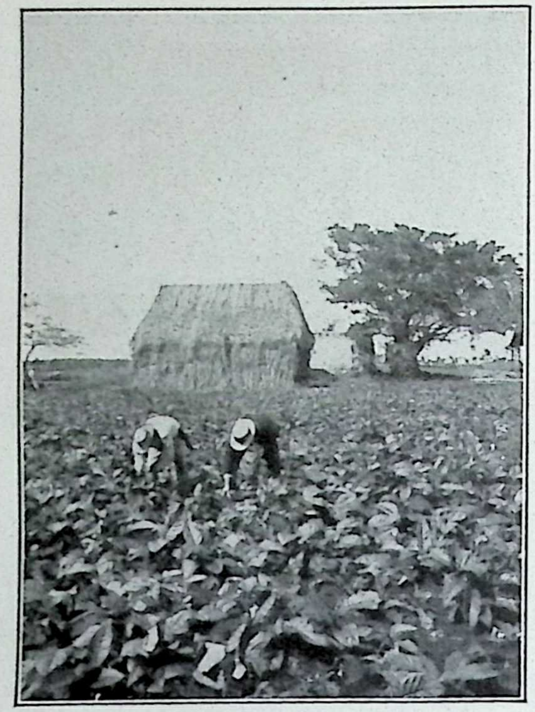

FIG. 232. *A Cuban tobacco plantation.*

Scenery. The scenery of Mexico is really but little known. The country is, however, full of beautiful mountains and wild gorges carved out by the rushing streams. It is especially famous for several high volcanoes. (See Fig. 230.)

A *volcano* is a peak made up largely of liquid rock that has burst forth from the interior of the earth and has then grown solid on the surface, just as liquid iron solidifies when it is poured out from the hot furnace of an iron foundry. Volcanoes sometimes appear singly, sometimes in groups, and often occur on the top of mountain ranges.

Central America. Central America is the name given to the six republics, *Guatemala*, *Honduras*, *Salvador*, *Nicaragua*, *Costa Rica*, *Panama*, and *British Honduras*, a dependency of the United Kingdom. The region lies in the Hot Belt, and is, therefore, only in part habitable for white men. The eastern coast is constantly swept by winds from the Caribbean sea, and therefore receives a heavy rainfall. In consequence the eastern slopes of the mountains are generally covered by great unoccupied forests. The greater number of people live on the drier west coast to the leeward of the mountains, where it is more healthful.

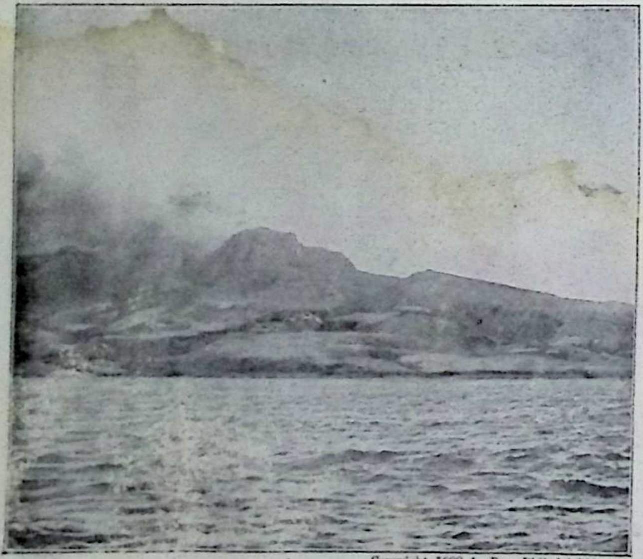

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FIG. 233. *Mont Pelée in the island of Martinique in eruption.*

The principal industry in Central America is agriculture, and the leading exports are agricultural and tropical forest products. Coffee, india rubber, mahogany, rosewood, dyewoods, and bananas are the leading exports. Costa Rica raises the best coffee produced anywhere in North America.

The larger number of the people of Central America are Indians and negroes, though the white population is increasing. The tropical climate causes so many food-giving plants to grow without much tillage that the people are naturally indolent and unprogressive.

The United States has a great interest in Central America at the present time because of the canal to be dug from the Atlantic to the Pacific, across the southern portion of the Isthmus of Panama. A canal across this narrow neck of land will make it possible for vessels from the Atlantic ports of Europe and from the Atlantic and Gulf ports of America to reach the Pacific ports of South America or the United States without going around South America, and hence will be of great advantage.

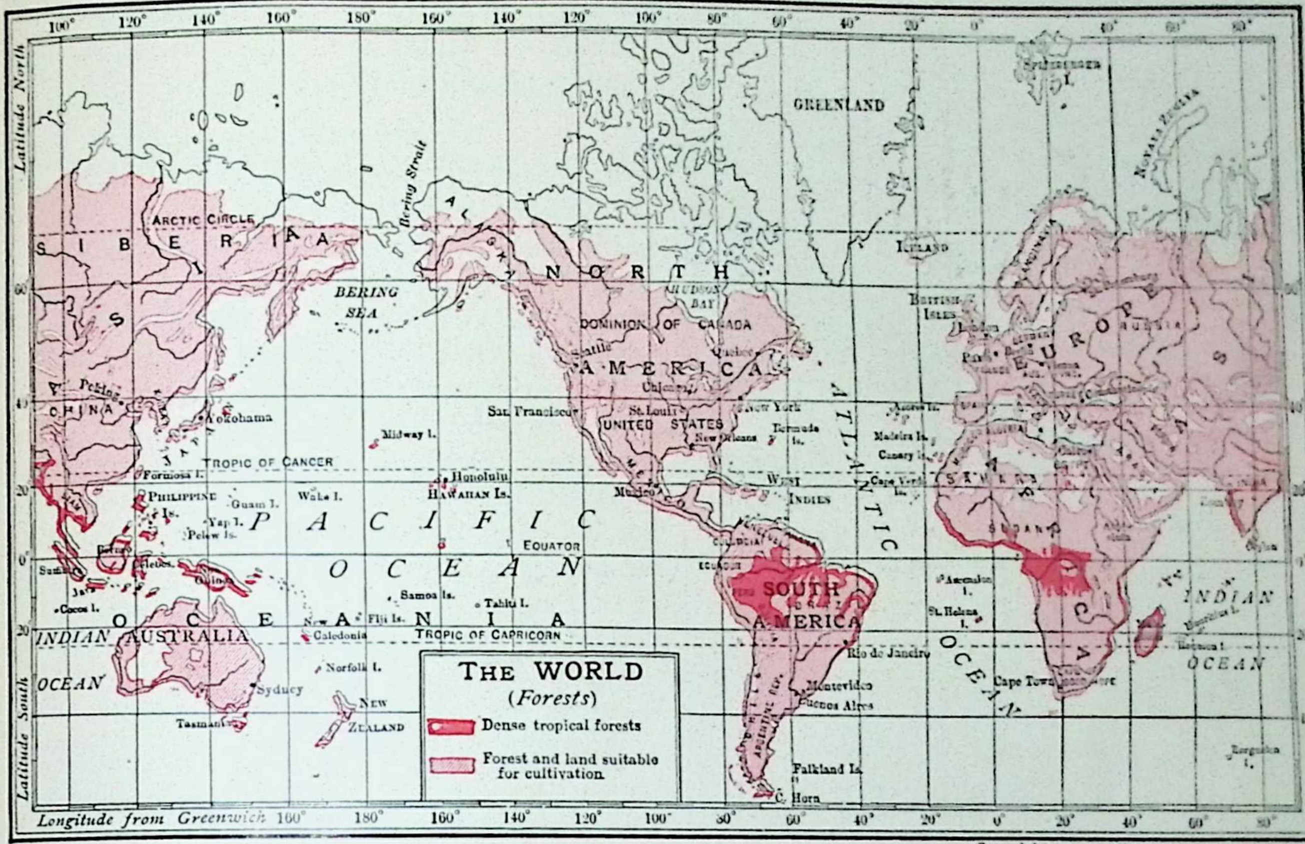

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FIG. 234. *A Map of the World, Showing the Distribution of Forest Areas.*

The West Indies. The West Indies are a series of large and small islands between the Atlantic Ocean and the Caribbean Sea. One group of large islands extending nearly east and west is called the *Greater Antilles*, and includes *Cuba*, *Haiti*, *Jamaica*, and *Porto Rico*. The other group, consisting of many small islands, extends from Porto Rico almost to the coast of South America, and is called the *Lesser Antilles*. (See Fig. 231.)

Cuba, the largest island, and about the size of Pennsylvania, formerly belonged to Spain, but came under the protection of the United States during the Spanish War in 1898, and became an independent country in 1902. The United States has recently been considering the purchase from Denmark of three small islands which lie just east of Porto Rico, and one of which, St. Thomas, has a particularly fine harbor.

FIG. 235. *A harbor at St. Vincent, one of the West India islands. Food products are brought in these small ships from the surrounding islands and thence carried to northern markets.*

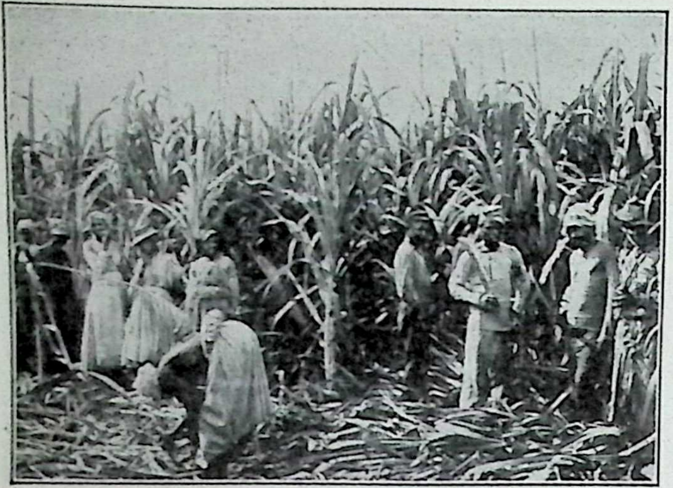

FIG. 236. *Cutting and gathering sugar cane on a plantation in the West Indies.*

Martinique and St. Vincent (see Figs. 233 and 235), in the Lesser Antilles, became world famous in 1902 because of a series of terrific volcanic explosions which caused the greatest loss of life and property ever known to be due to a volcanic eruption.

Industries in the West Indies. Owing to the position of the islands of the Hot Belt, we are not surprised to find the products similar to those of Mexico and Central America, and agriculture to be the leading industry.

Cuba is a very important sugar-cane and tobacco-raising (see Fig. 232) country, and ships the larger part of its products to the United States. Haiti and Santo Domingo raise and export coffee, sugar, tobacco, and cocoa. (See Figs. 236 and 237.)

The Bahamas are important for pineapples, oranges, grape fruit, guavas, and sponges. The guava is a fruit that is chiefly used in making guava jelly. Sponges are colonies of animals that grow at the bottom of the ocean in these warm regions. They are either dredged up or pulled from the bottom by skillful divers, who swim down to the sponges and bring them to the surface. Sponges have to be washed and treated in several ways before they are ready for use in bathing and for other purposes.

Cities. The most important cities are *Havana* in Cuba; *Ponce* and *San Juan* in Porto Rico, and *Kingston* in Jamaica. These cities are all connected by steamship lines with the United States, and have an important amount of commerce with us.

Suggestions for Review

(1) Who is the President of Mexico? (2) What part of the United States once belonged to Mexico? (3) How would you get to Mexico by train? By steamer? (4) At what time of year would you prefer to go to Mexico, and why? (5) What have you ever seen that came from Mexico? (6) Why do the people wear broad-brimmed hats in Mexico and Central America? (7) What volcanoes have you heard of in Mexico? (8) Find out all you can about the building of the Panama canal. (9) Find out all you can about the people of Porto Rico and Cuba. (10) Why is Havana the most important port in this region for commerce with the United States? (11) Find out all you can about the volcanic eruptions in Martinique.

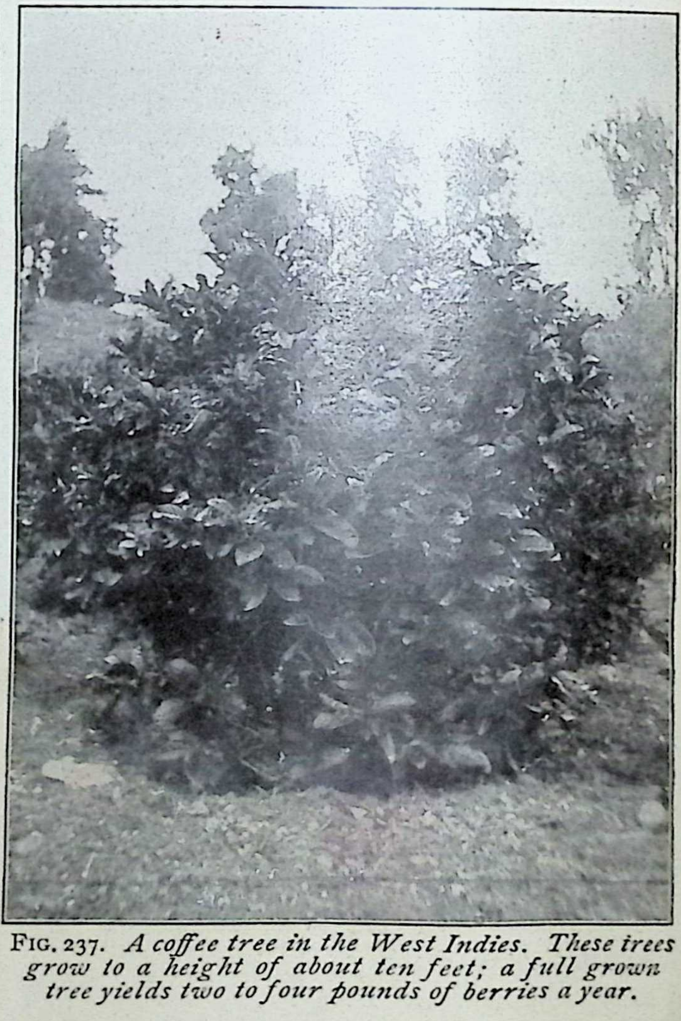

FIG. 237. *A coffee tree in the West Indies. These trees grow to a height of about ten feet; a full grown tree yields two to four pounds of berries a year.*

SOUTH AMERICA

XXXII. *SOUTH AMERICA*

Relative Importance and Size. South America is a little smaller than North America and hence is the fourth in size of all the continents. Large parts of it are little known, and thus the continent is not as important for its commerce as Europe, for instance, which is much smaller in extent.

Climate. In many ways South America is much like North America, but in one way it is quite different. The map of the heat belts shows that the northern part of South America is in the Hot Belt and the smaller southern portion reaches the Cold Cap. The continent is broad at the north and narrow at the south, just as North America grows narrow toward its southern end.

North America has a large, barren, unoccupied area in the Cold Cap, while very little of South America lies in the region of constant cold. South America has a large area in the moist Hot Belt.

The Hot Belt region is very rainy except on the western or leeward side of the Andes. The moisture and warmth make vegetation grow luxuriantly, especially in the valley of the Amazon, which contains one of the greatest forests of the world. (See Fig. 234.)

The western side of the Andes receives no moisture from the winds because they have lost it all on the eastern Andes. Hence the region is dry, especially in Peru and northern Chile, where there is a small but very dry desert.

To the south, in the temperate regions, the winds come from the west, and the eastern plains, in the lee of the mountains, are therefore drier than the Pacific coast. Grass covers a large part of the country. Here we find grazing important, as we should expect. In the extreme south the winds always blow from the west, and, though it does not rain so much, it is cloudy and chilly most of the time.

Surface and Drainage. Most of the coast is either very low and straight or very steep and straight, so that there are few good harbors. The best, as in North America, are on the Atlantic side where the lower portions of the river valleys have been drowned. The coast of southern Chile is extremely irregular and has a number of good harbors.

South America, like North America, has a high *Western Highland* and a lower *Eastern Highland*, with the rest of the continent occupied by a series of great lowlands in which large rivers are found. The Western Highland, called the *Andes Mountains*, skirts the Pacific very closely, and contains many very high peaks. The Eastern Highland is a broad low plateau extending in its widest part two-thirds of the way across the continent. It is called the *Brazilian Highlands*. Just to the north and separated by the wide valley of the Amazon are the small *Guiana Highlands*. (See Figs. 239 and 244.)

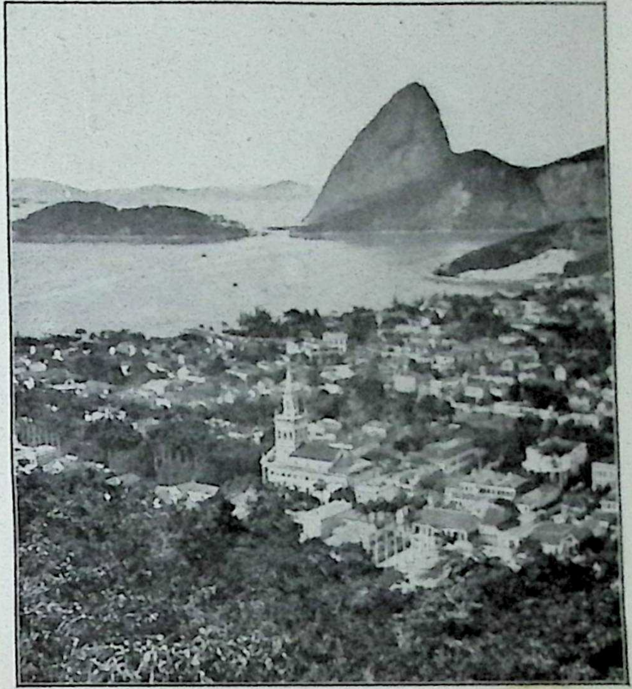

FIG. 238. *A view of the city and harbor of Rio de Janeiro, Brazil.*

Between the highlands is an extensive central lowland drained by several large

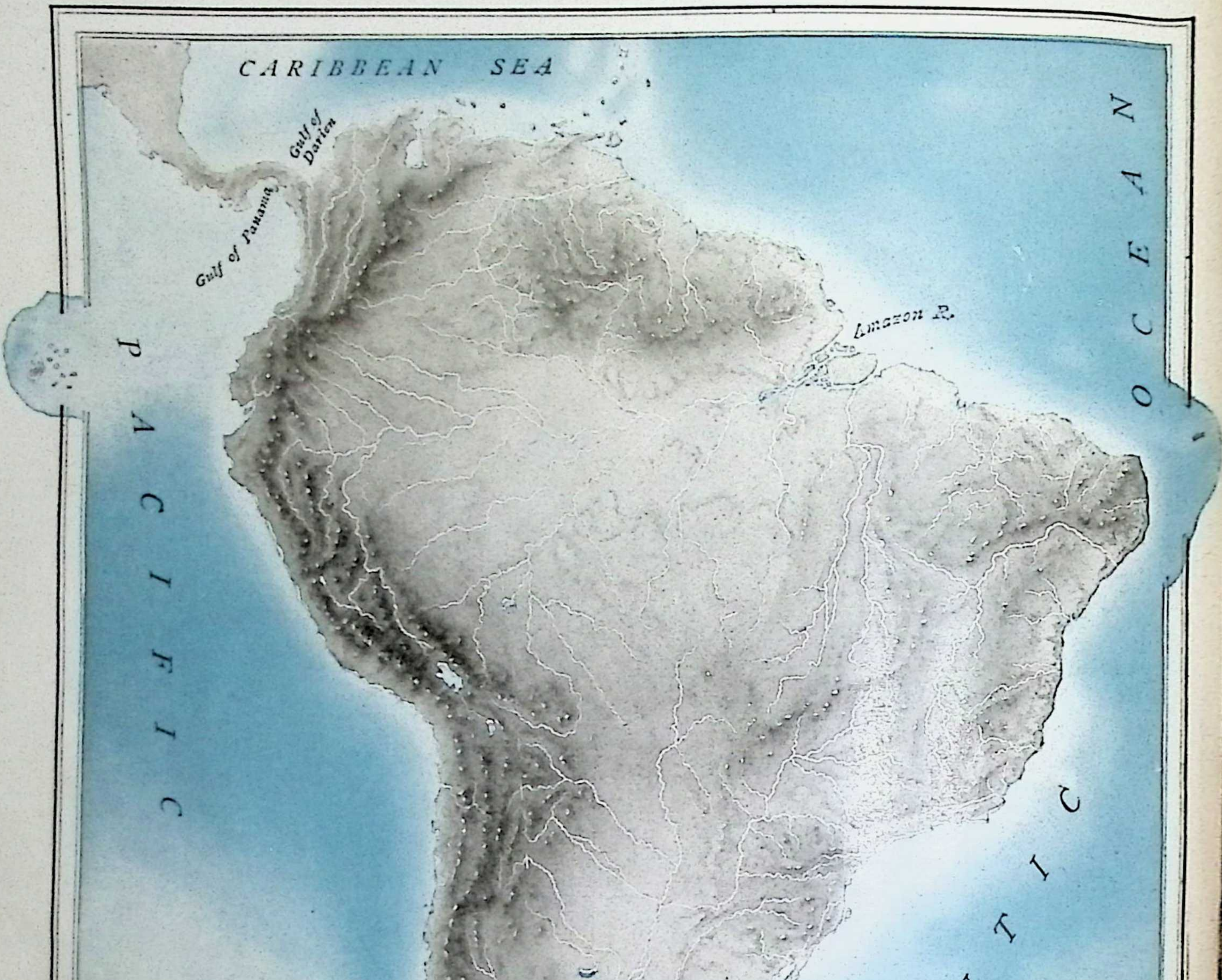

FIG. 239.

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rivers, of which the *Amazon*, *La Plata*, and the *Orinoco* are the most important.

The Amazon River is one of the *great rivers of the world*, although it is not the longest. It drains a larger area than any other river, and as it runs throughout its length across a region where it is very rainy, it is naturally *the largest river in volume in the world*.

As these rivers are navigable throughout the greater part of their course, they serve as the main routes of travel and trade. The eastern slopes of the Andes, although more than three thousand miles from the Atlantic, can be reached by boat up the Amazon.

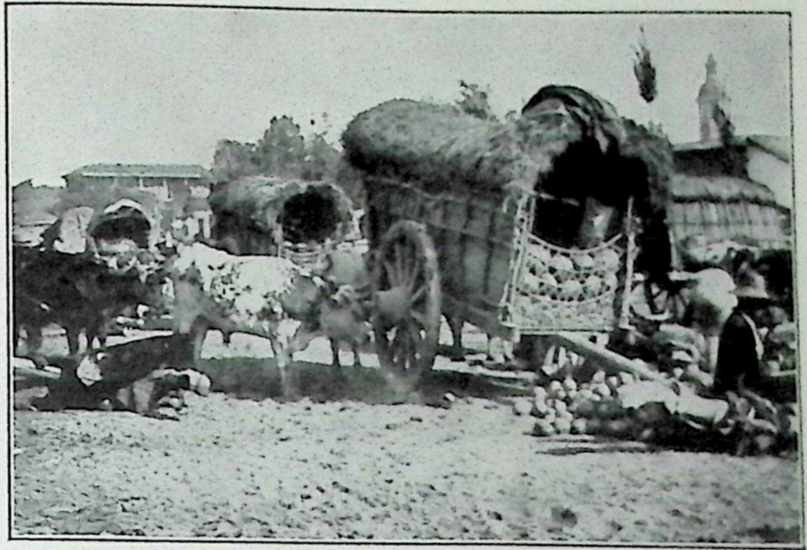

FIG. 241. *Native Chilean carts in which farm produce is brought to the town markets.*

Animals. There are many interesting animals in South America. In the forests within the Hot Belt are great numbers of *monkeys* with long tails which they can use in climbing. Bright-colored humming birds, parrots, and insects also abound in these regions. Along the higher slopes of the Andes are found the *llama*, a small camel-like animal which is used for carrying loads, and the *alpaca*, which is valuable for its hair.

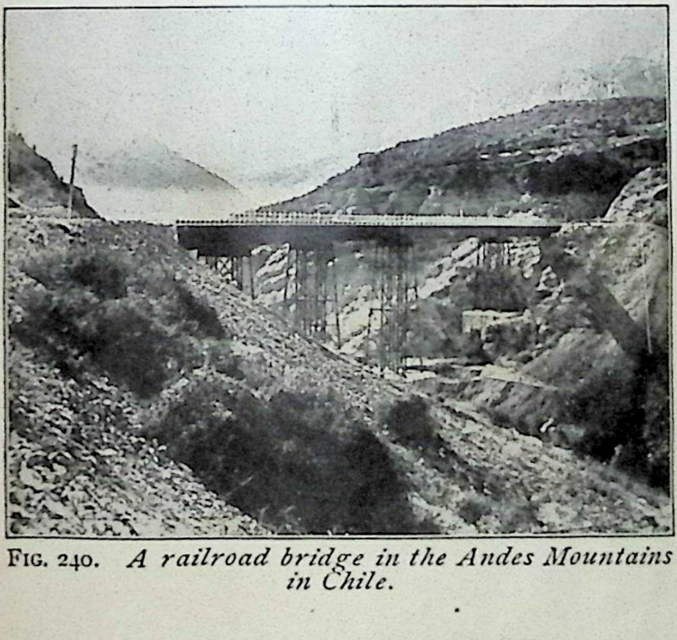

FIG. 240. *A railroad bridge in the Andes Mountains in Chile.*

The fiercest animals are the *jaguar*, which is much like a tiger, and the *puma* or American lion. In the southern plains lives the large ostrich-like bird known as the *rhea*. The great *condor*, found in the higher slopes of the Andes, is the largest flying bird of the world. The *vampire bat* is a giant of its kind.

Occupations. Grazing, agriculture, and mining are the chief industries of South America. Mining, as we should expect, is the most important in the highland areas. Agriculture thrives on gentler slopes where the rainfall is suitable, or where irrigation can be carried on, and the dry, flat plains are devoted to grazing. All the countries of South America are commercially important. While the Argentine Republic leads in the commerce of the continent, Brazil leads in commerce with the United States.

Brazil. Brazil, a country a little larger than the United States, lies almost entirely in the Hot Belt. The great lowlands of the Amazon are covered with a dense forest containing many rubber trees. The inhabitants in these lowlands are very few, and are nearly all Indians. In the highlands of the coast area and in the cooler southern and southeastern regions, the white people are usually found, and here the principal cities are located. (See Fig. 251.)

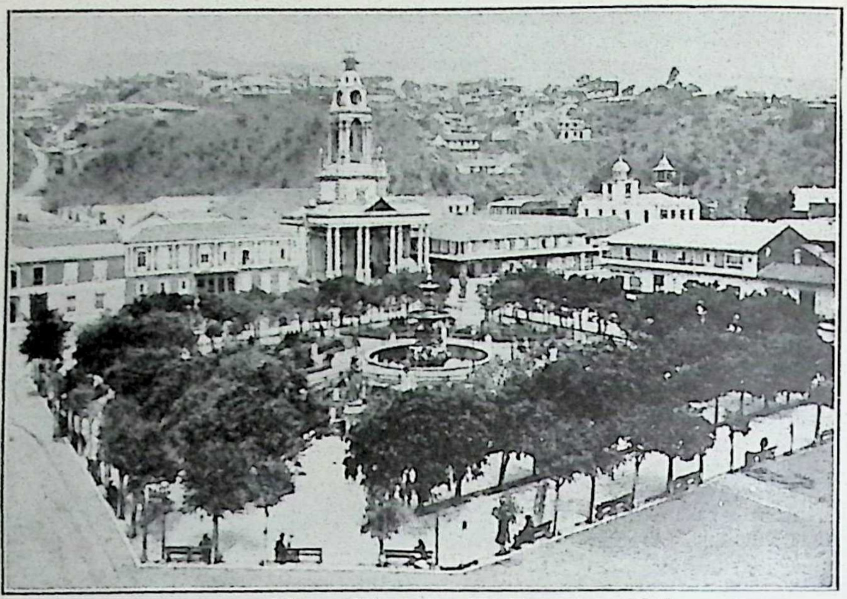

FIG. 242. *Plaza Victoria, Valparaiso, Chile.*

The chief products of the soil are coffee and rubber; indeed Brazil has the largest coffee and rubber trade of any country in the world. Other products, possible because of the warm, moist climate, are sweet potatoes, yams, maize or Indian corn, bananas, and manioc, all grown for food and not for exportation. Manioc, from which tapioca is made, is one of the most important articles of food in Brazil.

Brazil is devoted almost entirely to the raising of crops and forest products. As there is little manufacturing, no manufactured products are exported.

Cities of Brazil. The leading city, which is also the second largest city in South America, is *Rio de Janeiro*, commonly called *Rio.* Rio has a large and beautiful harbor (see Fig. 238) and is the principal commercial port of the country. *Santos* is the chief coffee port. *Bahia* exports coffee, tobacco, and tropical timber. *Para* is the great center of the rubber trade, and *Pernambuco* has a flourishing sugar and coffee trade. Another important city is *Manaos*, one thousand miles up the Amazon River, and at the junction of several tributaries. Its location makes it a great center for collecting and distributing rubber.

Argentine Republic. Next to Brazil the Argentine Republic is the largest and richest country of South America. Lying as it does almost entirely in the Temperate Belt, the conditions are very favorable for agriculture and for grazing. The climate is healthful in most of the country, and the people can sleep out of doors during a great part of the year.

A large part of the country is an almost level plain which stretches from its northern portion nearly to the southern end of the continent. In the region west of Buenos Aires wheat, corn, and flax are grown for export. Linseed oil, which is made from the seed of flax, and wheat are the leading agricultural exports.

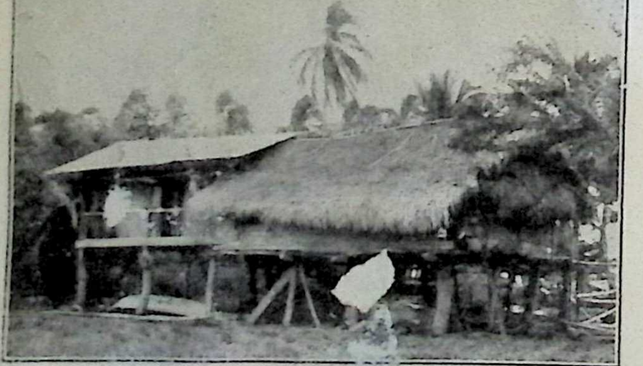

FIG. 243. *A home on a river near Guayaquil, Ecuador. The house is built on stilts to escape the freshets.*

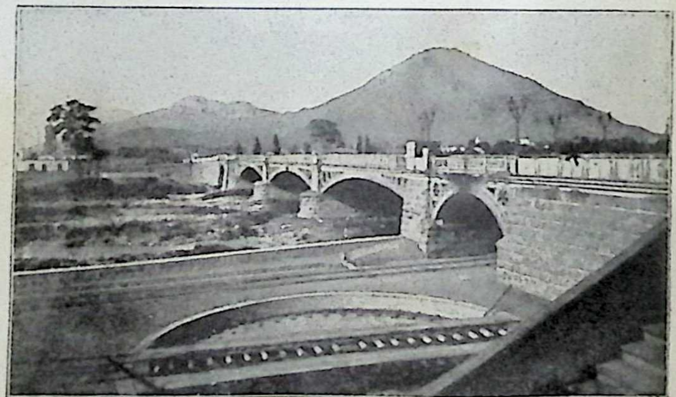

FIG. 244. *A bridge over the river at Lima, the capital of Peru.*

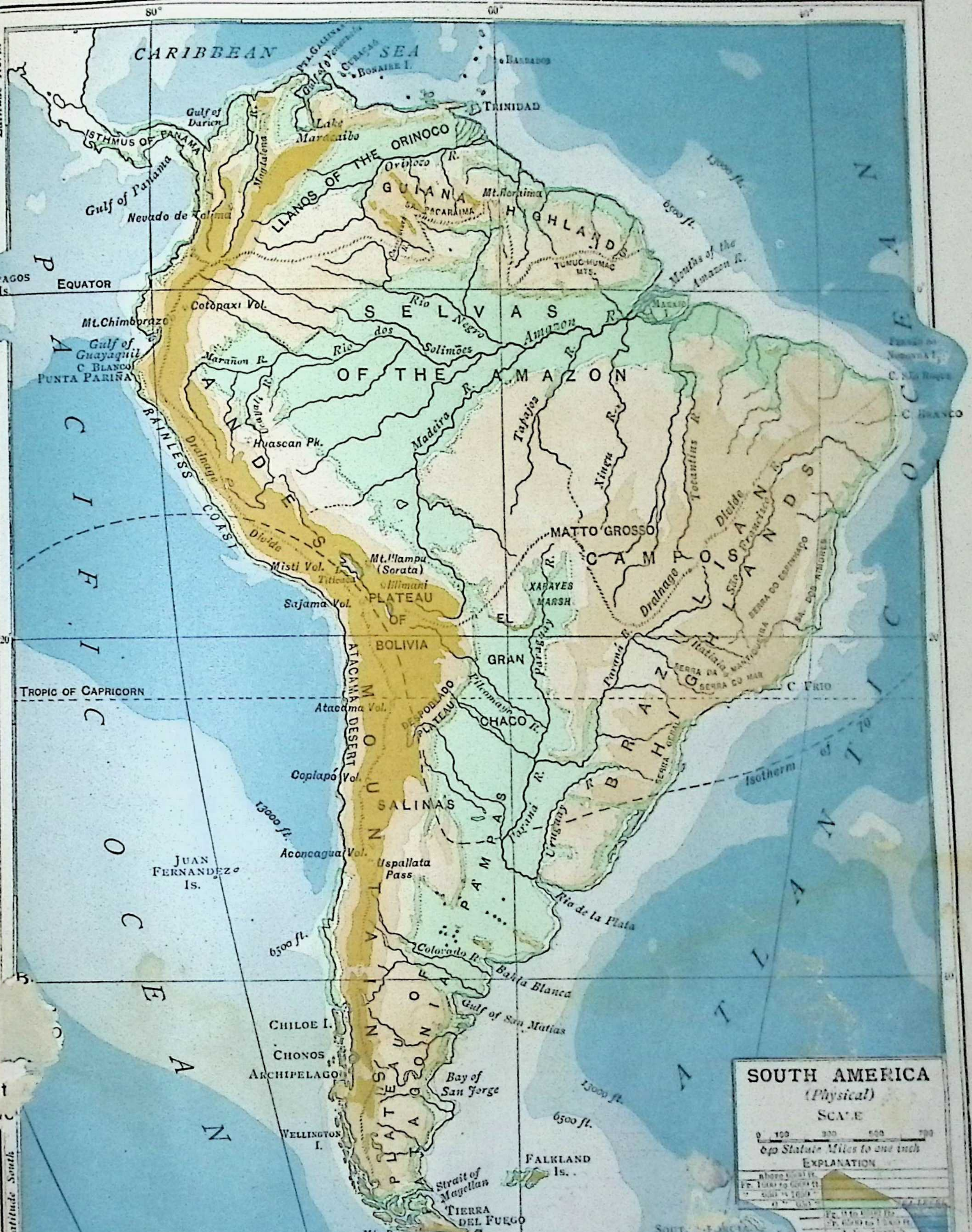

FIG. 245.

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FIG. 246. *A native Indian of Colombia.*

The chief products of the country are wool, hides, skins, and frozen meat. Some of these are exported to the United States, but most of the frozen meat, which is largely mutton, is sent to Europe.

Buenos Aires, at the mouth of the La Plata, is favorably situated for land and water commerce. It is the leading port and the largest city in South America, and the greatest exporting city for frozen mutton in the world. Buenos Aires has active manufacturing industries, producing cotton cloth, carriages, and furniture in large quantities, but not for foreign commerce.

Owing to the productiveness of the country and its level character, there are more railways in the Argentine Republic than have been built in any other South American country.

Gold, silver, and copper are mined in the mountain regions and are exported to Europe.

Paraguay and Uruguay. Paraguay and Uruguay are two small grazing countries in southern South America. Both are level plains with low mountain ridges. Grazing products are the leading exports of both countries, though Uruguay exports some wool, wheat, and linseed oil, and Paraguay exports Paraguay tea to other parts of South America. Paraguay tea is a sweet-tasting herb which is used extensively in South America instead of regular tea.

Montevideo in Uruguay is one of the leading cities of South America and has a large trade in meat extracts and dried beef. *Asuncion* in Paraguay has an extensive trade in hides, horns, bones, and other cattle products. It is well situated for river commerce with the interior, as well as for oceanic commerce.

Chile. Chile is a long, narrow, mountainous country, stretching about half the length of the western coast of South America. The mountains are very high and of great beauty. *Mount Aconcagua* is the *highest peak in the Western Hemisphere.*

The northern portion, which is very dry, is famous for its nitrate mining. The nitrate is dug from the ground and is valuable as a fertilizer for soils and in making gunpowder. Next in importance is the mining of gold, silver, and copper, which are found in the mountains. In central Chile cattle, wheat, and fruit are raised. (See Fig. 241.) In the southern portion of the country lumbering and fishing are the chief local industries.

Cities of Chile. *Valparaiso* is the leading port on the Pacific coast of South America. (See Fig. 242.) Its harbor is large and well protected, but so shallow that vessels cannot load from the wharves. Cargoes have to be transferred by means of lighters or small boats which carry the goods back and forth between the anchored vessels and the shore. A railroad is being built over the Andes between Buenos Aires and Valparaiso, and is nearly finished. (See Fig. 240.) The completion of this line will enable the trip to be made between these two cities in a little more than a day.

FIG. 247. *A native Indian woman of Colombia.*

Santiago, the capital, lies on a rich, irrigated plain.

Iquique is very important for its nitrate trade. It is located on the coast in a desert, and its water has to be brought from the mountains by means of a great aqueduct.

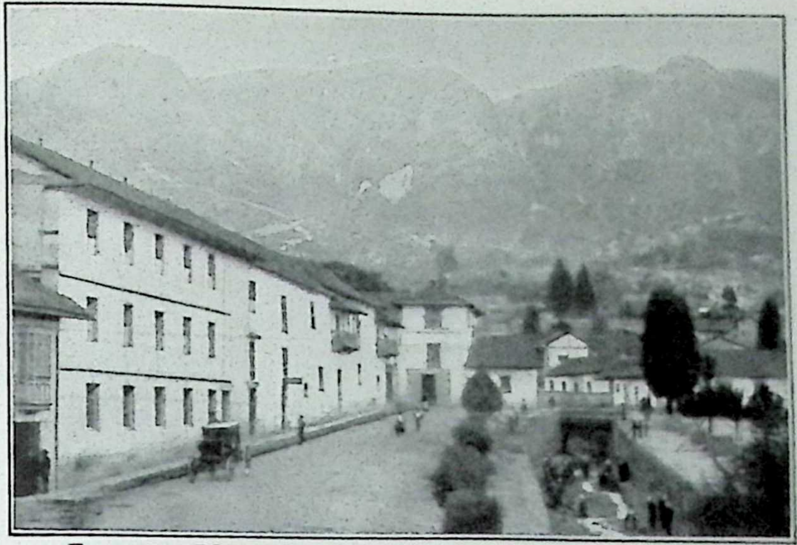


FIG. 248. *Plaza de Avnos, Bogotá, Colombia, showing the mountainous country.*

Close to the southern tip of South America, the Atlantic Ocean and Pacific Ocean are joined by a narrow, irregular strait known as the *Strait of Magellan.* It was named for Magellan, who first passed through it. He found this route in his historic exploring voyage, the first to be made *around the world* This strait is much used by steam vessels, and *Punta Arenas* in southern Chile is therefore visited by most vessels passing through the strait. Sailing vessels have to go around *Cape Horn.* This is a rough trip, as it is always stormy and windy in this part of the world. Great numbers of the people who rushed to California from the eastern United States in 1849 went by this route.

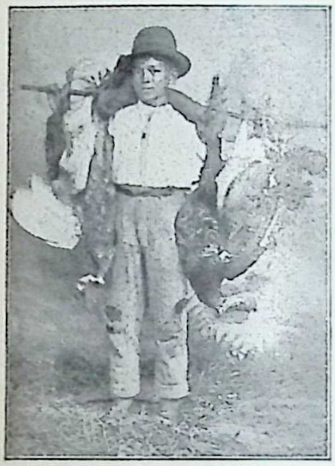


FIG. 249. *A young hunter from the mountains of Peru.*

Bolivia, Peru, and Ecuad[illegible] Bolivia, Peru, and [illegible]or are alike in being high and mountain[illegible] for the western portion bordering the ocean and for the eastern plains which slope down to the Amazon basin. As we have already seen, these countries are moist on the east and dry on the west. The mountains and plateaus are dry and cold, as highlands in the interior of a continent usually are. As a result these countries are not very densely populated, and the leading occupations of the people are mining and agriculture.

The mountains of Peru and Bolivia have long been famous all over the world for their gold, silver, and copper. Silver and copper are now the leading exports.

Except for the raising of cacao and cinchona trees in Ecuador, and cotton and sugar in Peru, little agriculture is carried on beyond what is necessary for securing food for use at home. From the bark of the cinchona tree is made quinine, a medicine that is almost universally used as a cure for malaria and fevers of various kinds.

Wool is secured in large quantities in Peru from the alpacas and small vicuñas. The only manufacturing industry of any importance is the making of Panama hats. These hats are woven by the natives of Peru and Ecuador (see Figs. 249 and 250), and the [illegible] reason for their being called Panama hats seems to be that they are brought to us across the *Isthmus of Panama*

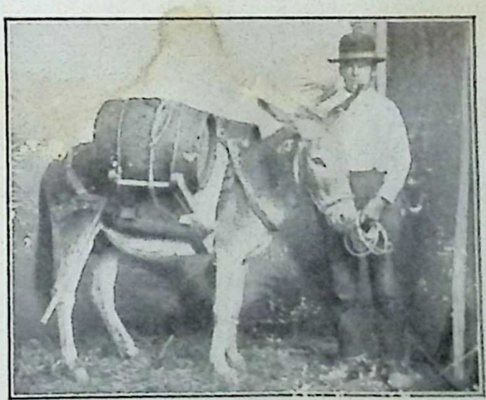
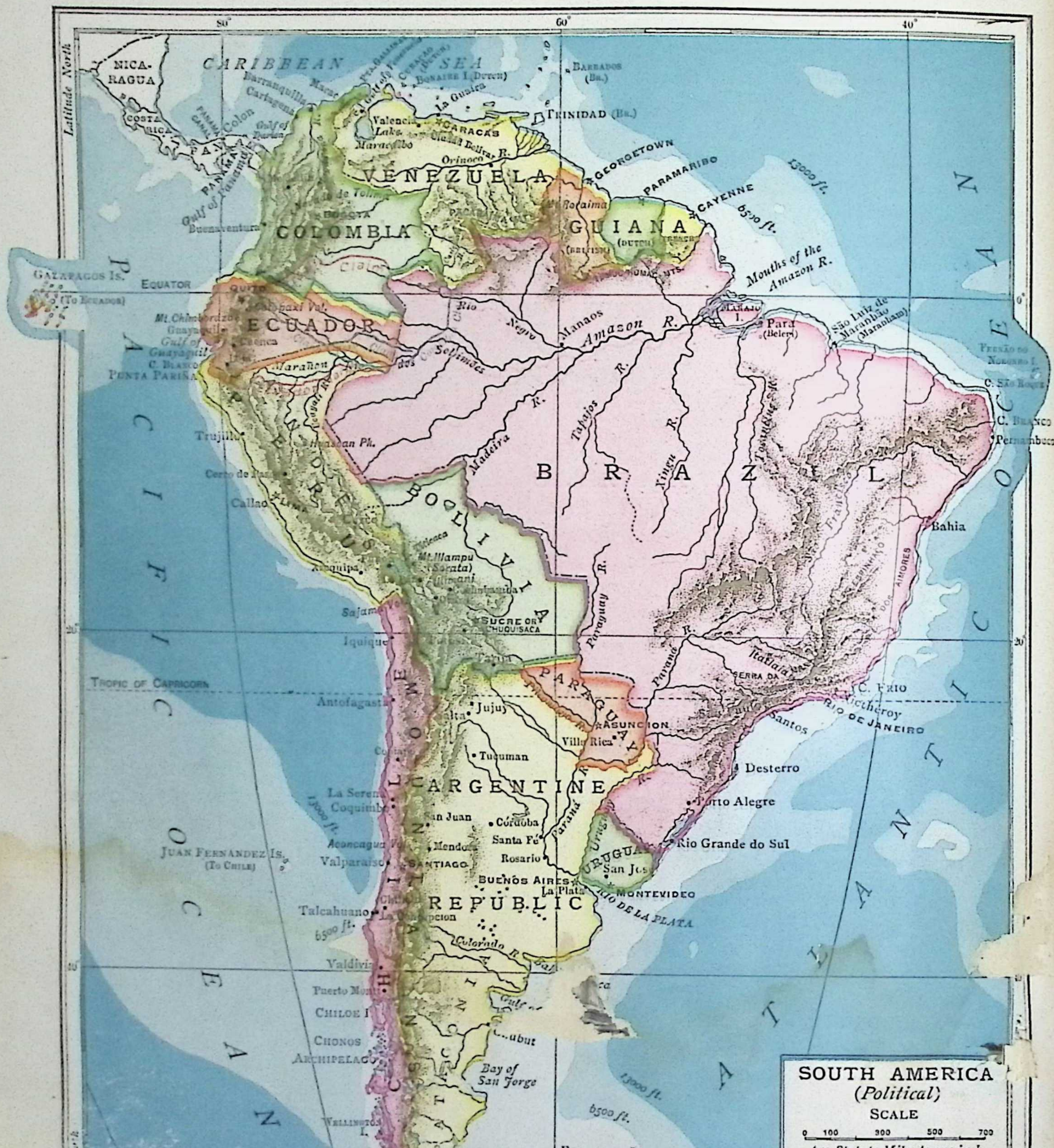


FIG. 250. *A water carrier in Ecuador.*



Revised, 1907

FIG. 251.

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Cities. *Guayaquil* is the leading port and city of Ecuador, and has an extensive commerce in cacao, cinchona, sarsaparilla, Panama hats, india rubber, coffee, hides, and sugar. The chief city of Peru is *Callao*, the port for *Lima* (Fig. 244), which is the *capital*. *La Paz* is the largest city of Bolivia. Trade with the Pacific coast is carried on by a line of steamers on Lake Titicaca which connects with a wonderful railroad over the Andes.

Scenery. These three countries are all full of beautiful scenery. *Cotopaxi* and *Chimborazo* are very high and slightly active volcanoes. *Mount Misti* in Peru and *Mounts Illampu (Sorata)* and *Illimani* in Bolivia also are famous peaks.

Lake Titicaca is another noteworthy feature of Bolivia and Peru. This lake is about eighty miles long and forty wide, and is 12,503 feet above the level of the sea. It is the highest navigable lake in the world, and is an important commercial route. The trade is carried on by steamers and also in small boats. These boats are made of rolls of [illegible] Indians and are skillfully managed.

Colombia, Venezuela, and Guiana. The three northern countries of South America are in the Hot Belt, and in general are healthful in the mountain areas and unhealthful in the lowlands. The population of these countries is small, and progress in Venezuela and Colombia is hindered by frequent revolutions. First one political party is at the head of the government and then another. During their wars commerce, agriculture, and other industries are neglected. Venezuela has the most important agriculture because it has the best lands in the basin of the great Orinoco River. Guiana is the only country of South America that is not a republic like the United States. It is divided into three parts, which are dependencies of the United Kingdom, France, and the Netherlands.

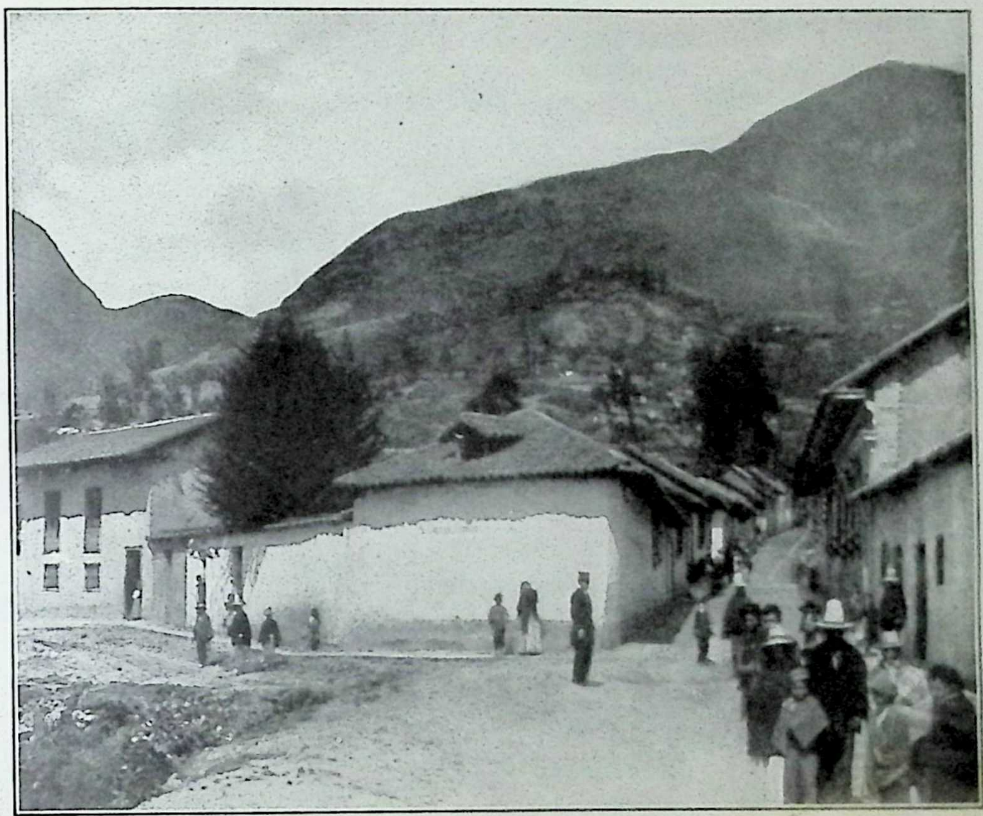

FIG. 252. *A village built on a mountain slope in Venezuela.*

As these countries are all very mountainous (see Figs. 251 and 252), mining, particularly for gold, is important. (See Fig. 218.) There is little manufacturing, and railroads are few. Hence the products of the country are all brought to the ports with difficulty. The products of the soil and the forests, most of which can be secured with little labor, are the important exports.

Colombia and Venezuela are important for their trade in cacao, coffee, cinchona, tobacco, hides, rubber, silver, and gold. Guiana raises a great deal of sugar cane, but

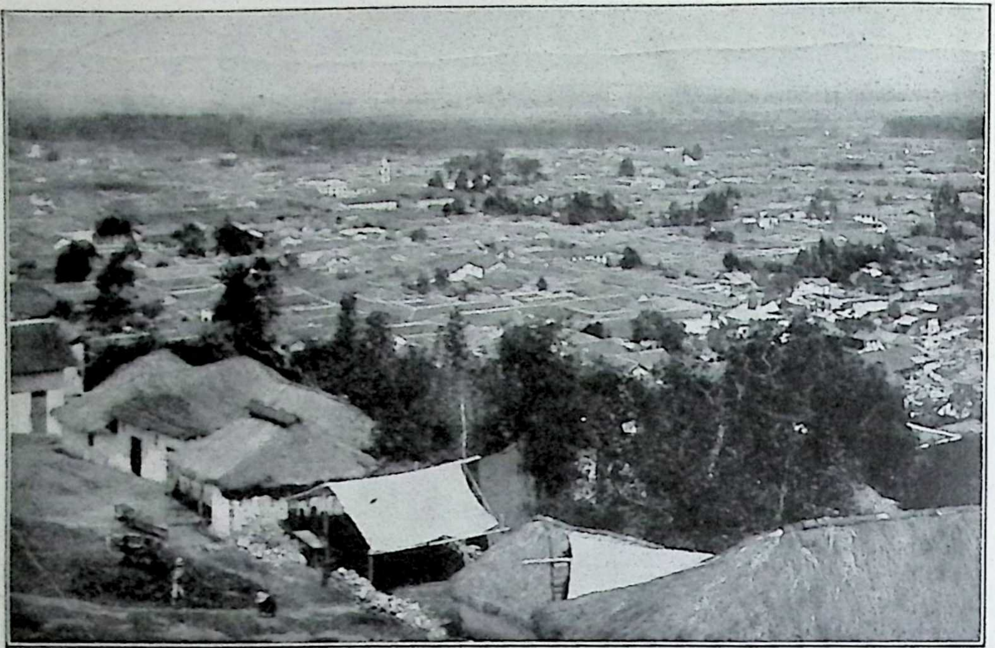

FIG. 253. *A general view of the city of Carácas, Venezuela.*

this industry is decreasing. Sugar, cacao, gold, rum, and molasses are now the leading exports. The climate of the coast region, especially that of French Guiana, is unhealthful at all seasons of the year.

Cities. *Bogotá* is the capital and largest city of Colombia. (See Figs. 248 and 254.) As the Magdalena River is the most important route into the interior, *Barranquilla*, near the mouth of the river, is the leading commercial town.

In Venezuela the principal cities are *Carácas* (see Fig. 253) and *Valencia*, both of which are in the midst of the rich coffee-producing country. *Maracaibo* is an important city in the western part of Venezuela, but its harbor cannot be entered by large vessels.

Suggestions for Review

(1) What countries in South America lie along the equator? (2) What city is on the equator? (3) On which side of the Amazon are the longest tributaries? Why? (4) What animals are found in the Amazon Valley? (5) What language is chiefly spoken in Brazil? (6) What is Rio coffee? (7) Why is the horse important in the Argentine Republic? (8) Why does Buenos Aires not send its meat to the United States? (9) Why is there no important amount of commerce between Chile and New York? (10) What is meant by "rounding the Horn"? (11) Why is it easier to sail around Cape Horn to the east than to the west? (12) Find out where the asphalt used in street-making comes from. (13) What states of the United States have the same local industries as the southern part of Chile? Why? (14) What country in which the United States is interested was formerly a part of Colombia? (15) Why have more people from the northern part of Europe settled in the Argentine Republic than in Brazil? (16) In what way does Guiana differ from the other countries of South America?

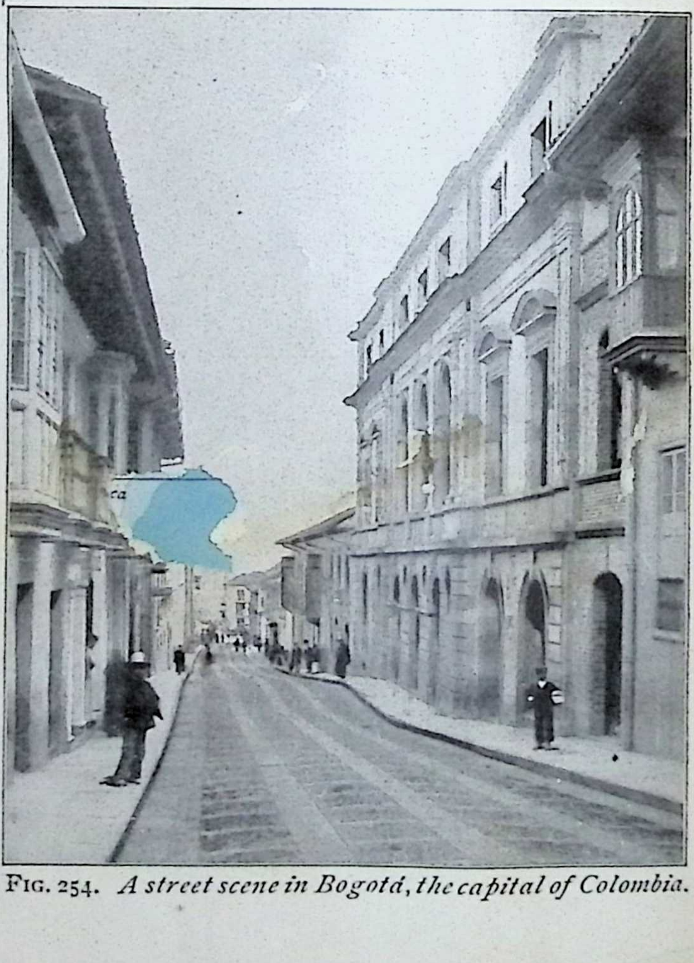

FIG. 254. *A street scene in Bogotá, the capital of Colombia.*

Dorthys barepeaded clothes

EUROPE

XXXIII. THE CONTINENT AS A WHOLE

Nature of the Continent. Europe is the smallest continent in the world except Australia. It contains many different nations, and has far more inhabitants in proportion to its size than any other continent on the globe.

Europe is really a part of the great land mass of Eurasia, and is called a separate continent only for convenience. The Ural Mountains in the north and the Caucasus in the south formerly were considered the boundary between Asia and Europe, but the leading geographers of to-day have adopted the boundary shown on the map. This boundary (see Figs. 261 and 270) follows a series of land depressions once occupied by a channel of water which connected the Mediterranean Sea with the Arctic Ocean, thus separating Europe from Asia.

Climate. Europe is almost wholly in the North Temperate Belt, and for this reason agriculture is possible throughout a large part of the area. The crops change from south to north very much as we found to be the case in the United States and Canada. The larger part of western Europe receives the moist west winds from the Atlantic and each year has an amount of rain that is equal to that of the southeastern part of the United States.

As one goes east toward the center of the continent the climate becomes more and more dry because the winds have lost their moisture in the western countries. A large part of eastern Europe is as dry as the United States just east of the Rocky Mountains. This dry region fortunately gets the larger proportion of its year's rain during the summer season, so that certain kinds of agriculture can be carried on in the warmer sections.

Surface. Northern and eastern Europe is mainly a great lowland plain with gentle slopes and extensive areas of good soil. Southern Europe is by contrast an area of mountains, of which the Alps, the Apennines, the Balkans, the Pyrenees, and the Carpathians are the most important. (See Fig. 261.)

The *Alps* are the highest and most noted mountains of Europe. They separate the thickly settled countries of northern Europe from the warm southern peninsula of Italy, and therefore have always had to be crossed by all traders or travelers between these countries. Some of the carriage roads over the Alps are very old and full of historic interest. Three railroad tunnels now pass under the Alps.

There are many small ranges of mountains just north of the Alps in Germany and extensive highlands are found along the peninsula of Norway and Sweden and in the British Isles. The special features of interest in reference to these mountainous regions will appear as we study the occupations and lives of the people of the different countries.

Coast Line. The coast line of Europe is very irregular; hence there are many countries in Europe that have most excellent harbors. The best harbors are in Norway, England, Germany, and along the Mediterranean Sea.

Europe as a whole is so nearly surrounded by water and has so many large peninsulas extending into the ocean, that no part of the continent is very far from the sea. This makes the distances between the interior cities and the ports very short, and as a result interior trade is carried on more easily and cheaply than in a large country like the United States.

Drainage. The rivers of western Europe flow away from the highlands of the Alps in every direction, and the largest number reach the Atlantic or the Mediterranean. The rivers of eastern Europe are the largest and longest, and the most important of these flow into the Caspian and Black seas.

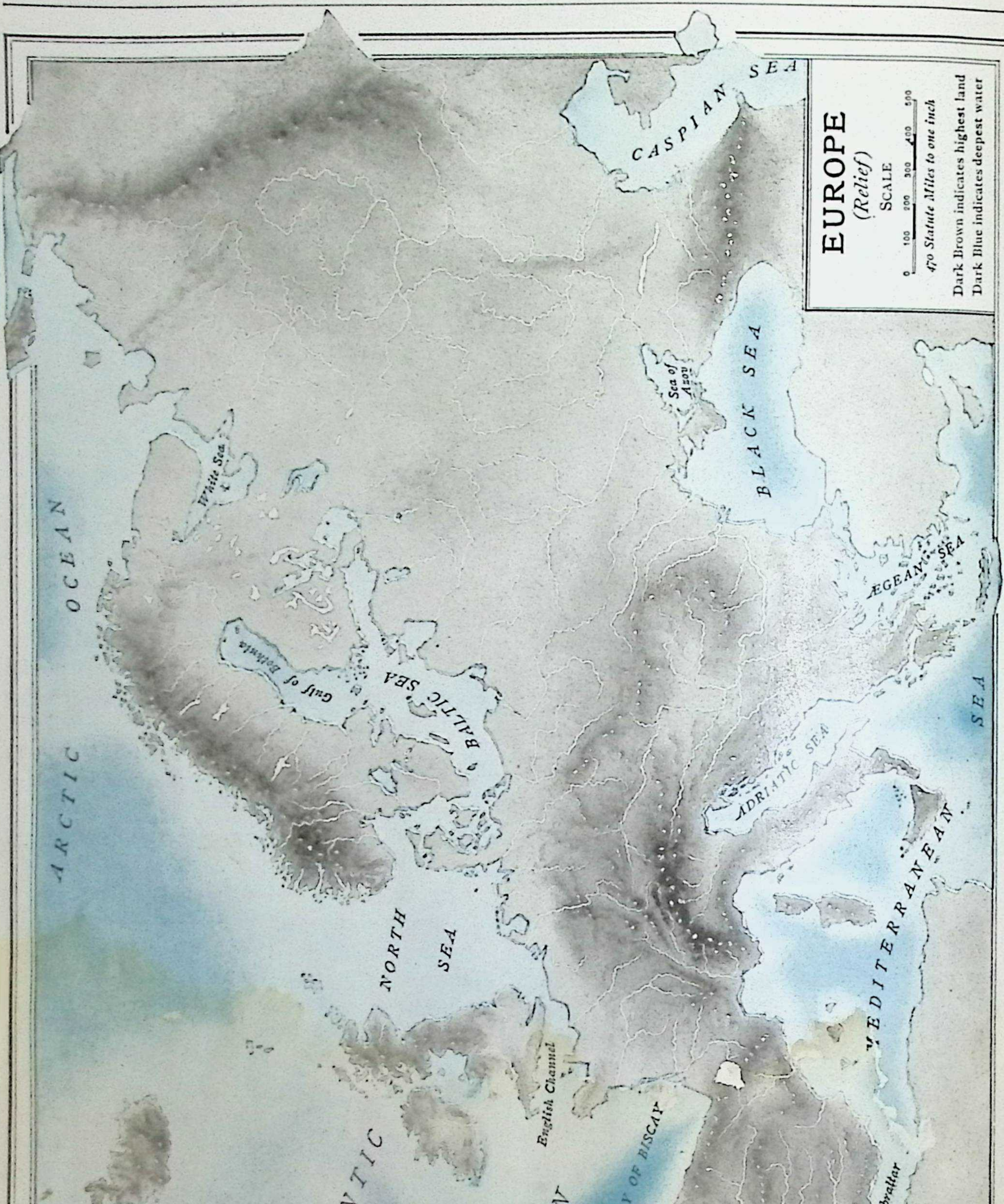

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FIG. 255.

Nearly all the rivers of Europe are navigable for long distances, since their courses lie so largely through low plains. Many of them are connected by canals so that interior trade by water is very easily carried on.

Animals and Plants. Great forests formerly covered a large part of Europe, extending to the north as far as the climate will permit trees to grow, but now in certain regions they have been cut for use so that the forest area is broken.

The most extensive forests now are in northern and southwestern Russia and in Norway and Sweden. The northern forests are largely made up of pine, oak, elm, linden, and ash trees, and extend north to the tundra region, where only grass and moss grow in the summer.

In the warmer southern countries, Italy, Spain, and Portugal, the more common trees are the orange, the lemon, and the olive, as we should expect. In parts of southeastern Europe, where it is too dry for trees to grow, there is a grass or *steppe* region.

The most interesting animals of Europe are the *chamois*, which is still found in the higher peaks of the Alps, and the *reindeer*, which is used for driving and work in Lapland. With these two exceptions, the animals are much like those of our own country, and so are familiar to us. The brown bears, foxes, wolves, beavers, ermines, and otters are the more important animals, as they have valuable skins.

The People. The larger part of the people of Europe belong to the white race, but the inhabitants of the tundra region on the north and the steppe region of southeastern Europe belong to the yellow race, as do the Chinese and Japanese, whom we have already mentioned.

Though the people are mostly of the white race, they are divided into many separate nations and speak many different languages. Indeed there are some cases where the people in one part of a country can hardly understand those in another. The languages we are most familiar with are French, German, Spanish, Italian, Norwegian, and Swedish, because they are used in the countries with which the United States carries on the larger part of its European commerce. The countries in which these languages are spoken are also the ones most visited by travelers from our country. The other important language of Europe is Russian.

The white people of our country are descendants of early settlers who came from Europe. Hence Europe is the most interesting to us of all the continents, and is the one to which we are most closely united, as is well illustrated by the fact that England is often spoken of as the "Mother Country."

Occupations. Europe is particularly well adapted for agriculture because of its varied climate and its extensive plains with good soil. The growing of cereals like wheat, rye, and barley is important in the lowlands and in those parts of the hilly regions where the slopes and climate are favorable. In the southern countries Hot Belt fruits such as the olive, wine grape, fig, and orange are grown in great quantities.

Among the mountains and on the northern and western plains, grazing is very important, cattle being raised in the north and west, goats in the south, and sheep in the southeast. Along the coasts, especially in Norway and France, fishing is the leading industry. Hunting is the principal occupation in the tundra area as well as in the northern forests.

Manufacturing has developed where coal and iron are found, as in Germany and England, and is increasing in importance in Norway and Sweden, where there is abundant water power.

The internal commerce of Europe is necessarily large, because of the great population to be provided with food and manufactured articles. The excellent railway systems, together with the many navigable rivers and canals, make it possible for trade to be carried on easily in almost any direction. Ocean commerce is active in all of the coast cities that have good harbors and good connection with the rest of the country either by rail or water. London, in England, is the leading commercial city of the world.

With this glimpse of Europe as a whole let us now study the different nations separately, and learn more of the people and what they are doing.

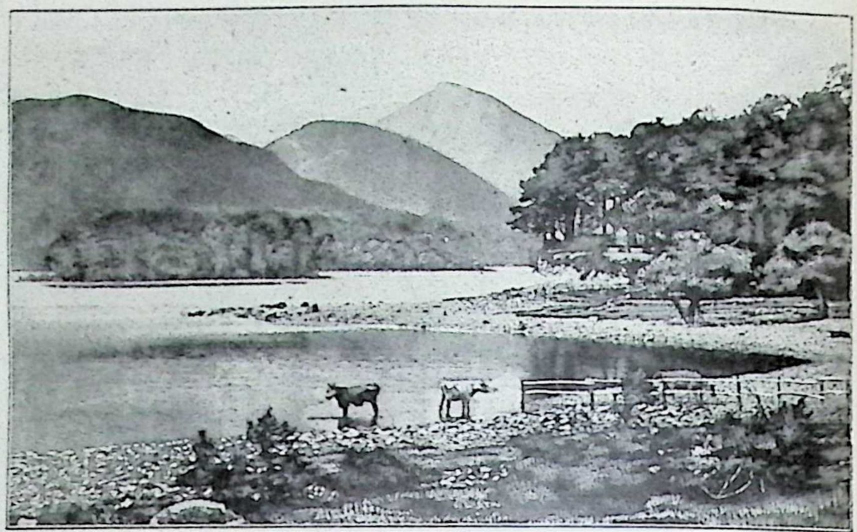

FIG. 256. *A scene in the famous English Lake District. In beauty of scenery this district surpasses all other parts of England.*

Suggestions for Review

(1) How many different countries are there in Europe? (2) Which are the most densely inhabited? Why? (3) What countries are most like the eastern United States? (4) What harbors are nearest to the United States? (5) What mountain ranges of Europe are boundaries between countries? (6) Why is a mountain range a better boundary than a river? (7) How many European languages have you heard spoken? Where did you hear them? (8) Of what other European ports besides London have you heard? (9) From what country did your ancestors come? (10) How many European nationalities are represented in your town or city or neighborhood? (11) Why are there more people living in southern than in northern Europe? (12) At what season of the year do you hear a great deal about reindeer? Why?

XXXIV. THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND

What the United Kingdom Includes. The *United Kingdom of Great Britain and Ireland* is the official name of the region commonly known as the British Isles. This long name is often shortened into the *United Kingdom*, which we will use. The United Kingdom includes the large islands of Great Britain and Ireland and about five thousand smaller islands near their shores.

Great Britain is divided into the three countries of *England, Scotland,* and *Wales*, and England contains the capital of Great Britain, *London*, which is *the largest city in the whole world.*

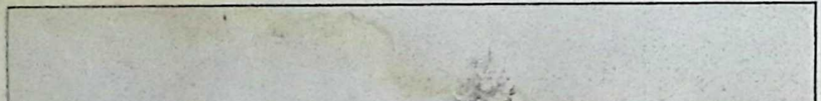

FIG. 257. *A highland cottage in Scotland.*

London is also the capital of the great *Bri[illegible] Empire*, which includes all the countries and colonies of the British government, scattered in all parts of the world. The most important of these are the *Dominion of Canada, Australia, India* and its dependencies, and the colonies of *South Africa*.

Climate. The United Kingdom is everywhere so near to the ocean that the climate is never very cold. The rainfall is abundant throughout the kingdom, but is greatest along the windward western coasts. The heaviest rainfall is found along the western coast of Scotland. The temperature and the moisture are favorable for agriculture and grazing except in the drier and colder highlands. Grass grows abundantly in the lowlands and on the more gentle slopes, so that the country is beautifully green.

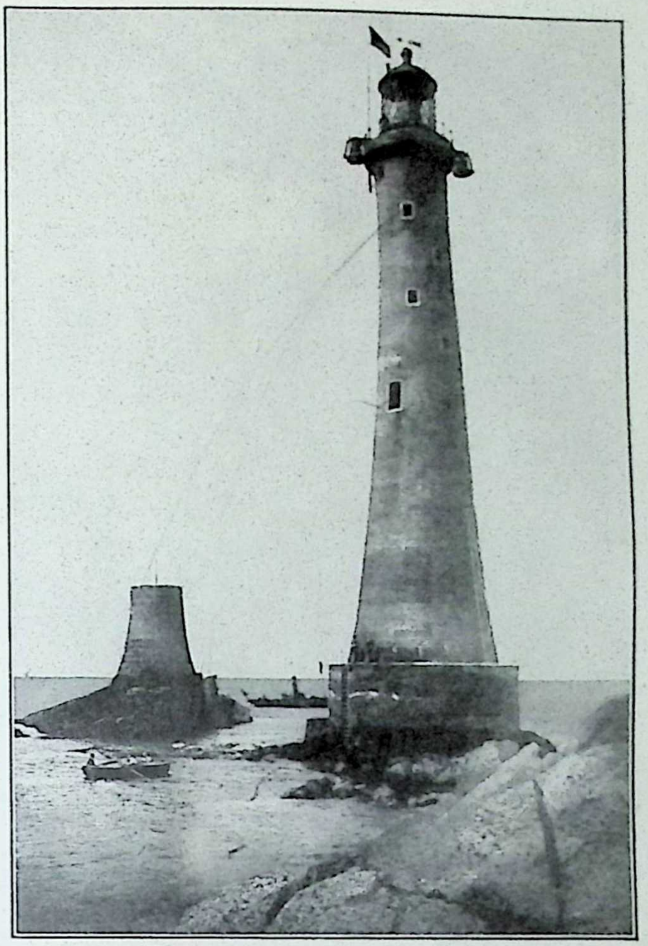

FIG. 258. *Eddystone Lighthouse marks a dangerous rock off the southwest coast of England.*

Surface. Southern and eastern England is a broad low plain (see Fig. 259) with occasional ranges of hills. In this level region the population is most dense. In southern Scotland is another lowland in which are the leading Scottish cities.

The mountains of Great Britain are nowhere very high, but they skirt the western coast and consequently get the heaviest rainfall of the island. The highest peaks of Great Britain are in the northern Scottish highlands, which also contain many beautiful lakes or *lochs*, that make traveling through this picturesque country extremely pleasant and easy. The larger part of the Scottish highlands is now divided into great private hunting estates, on which deer and other game animals are allowed to run wild.

Coast Line and Rivers. The coast of the United Kingdom is rocky and dangerous (see Fig. 258), but it abounds in fine harbors. Those most used are in the southern part of the island, because these regions are most densely inhabited. The most irregular part of the coast is in northern Scotland, which is bordered by a great number of large and small islands.

The rivers of the United Kingdom are all short, the longest being those that flow across the plain of southern England. The lower valleys of several of the rivers have been drowned so that they are navigable and form excellent harbors. The Thames is one of the best examples of such a drowned valley.

Occupations. The chief occupations of

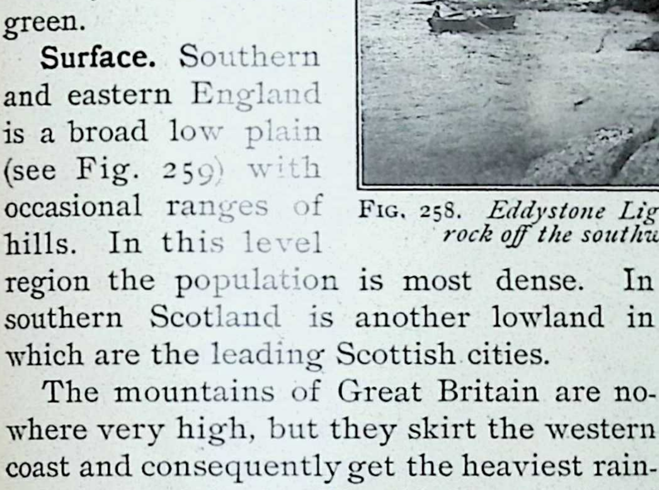

FIG. 259. *Sheep grazing on the plains of southern England.*

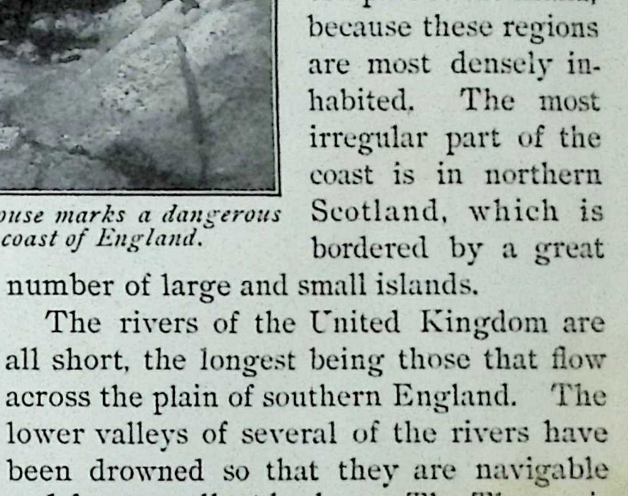

FIG. 260. *A group of Highland cattle in Scotland. Notice the long, shaggy hair.*

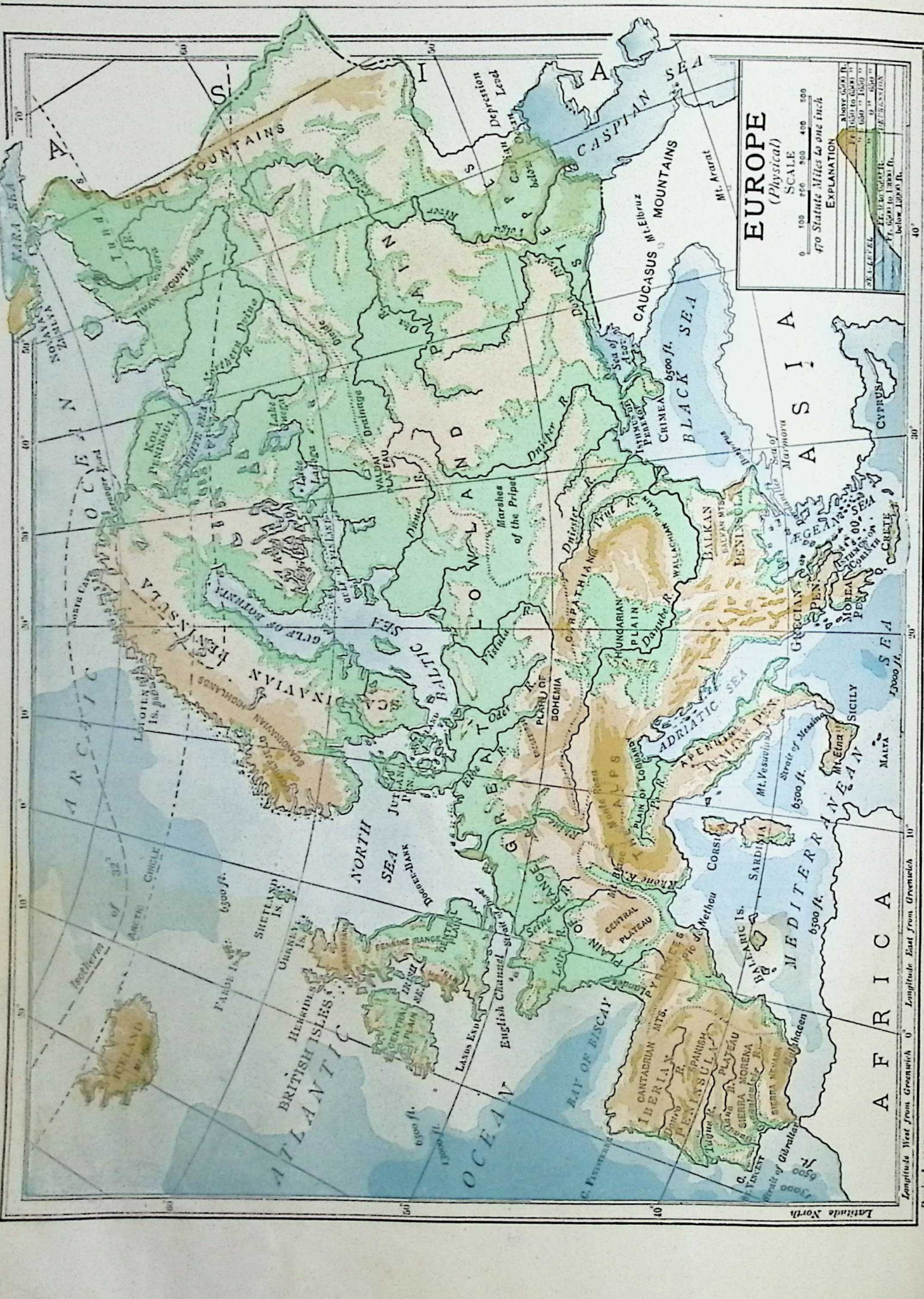

FIG. 261.

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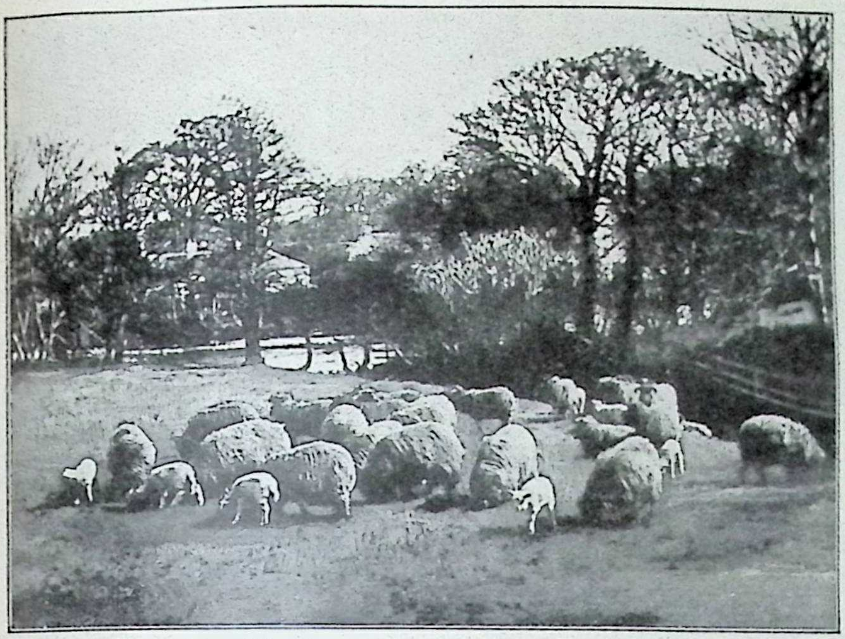

FIG. 262. *Sheep grazing near an English village.*

the people of the United Kingdom are agriculture, grazing, mining, manufacturing, fishing, and commerce; these occupations are found where conditions are most favorable.

In the northern highlands of England, in Scotland and Wales, mining and grazing are important. The chief minerals are coal and iron, which are found in each of these countries, and tin, which is found in England. The iron is all used at home, but much coal is exported, as the United Kingdom produces more coal than any other country except the United States.

Sheep and cattle (see Fig. 260) are raised in the highlands of Scotland in large numbers, as cattle are in western England.

The plains of southern Scotland and of eastern and southeastern England are devoted to agriculture and grazing, especially sheep raising. (See Figs. 259 and 262.) Oats, barley, wheat, turnips, potatoes, and fruits are the chief products. Because the population of the United Kingdom is so large, great quantities of food, especially wheat and fresh meat, have to be imported. The people of the coast towns are largely engaged in fishing in the North Sea, and fishing is one of the most important occupations of the country.

Manufacturing. With its abundant iron, coal, wool, and other products, the United Kingdom has become a great manufacturing country. A large quantity of cotton is imported for manufacturing purposes, because the climate of western England is very favorable for certain kinds of cotton spinning. As a result there are many large manufacturing cities.

Glasgow, on the river Clyde, is near to coal and iron mines, and has become the greatest center of steel shipbuilding in the world.

Manchester, near to a rich coal region and close to excellent water power, is a cotton-spinning city, and manufactures cotton spinning machinery. Within the past few years it has been connected with the great port of Liverpool by a ship canal, which provides a cheap waterway to the sea for its goods.

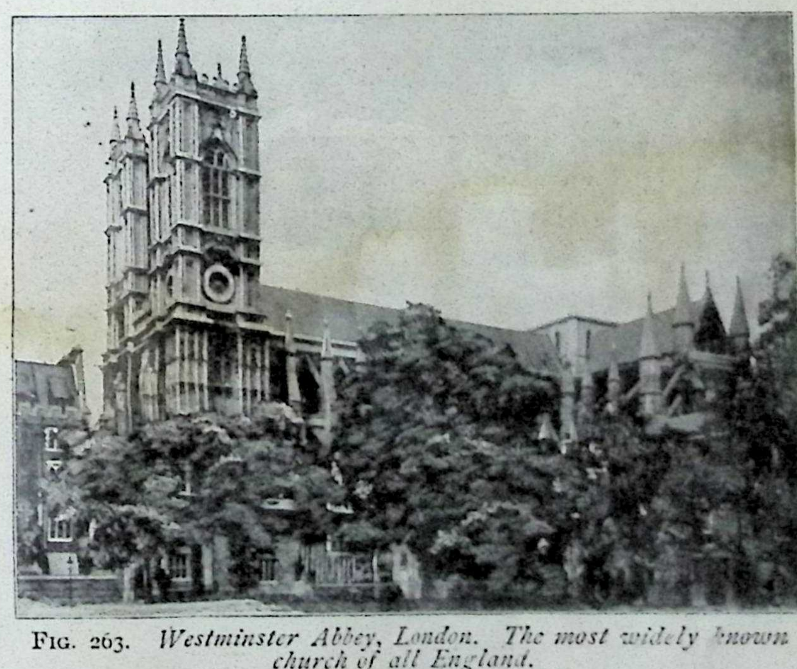

FIG. 263. *Westminster Abbey, London. The most widely known church of all England.*

Birmingham, which is also close to coal and iron fields, specializes in the manufacture of hardware, jewelry, and fine metal work.

Leeds is another great manufacturing city, famous the world over for woolen goods and machinery

Sheffield is equally noted for cutlery and steel rails, and for armor plate for war vessels.

Edinburgh, the historic city of Scotland, has important book-printing, brewing, and other industries.

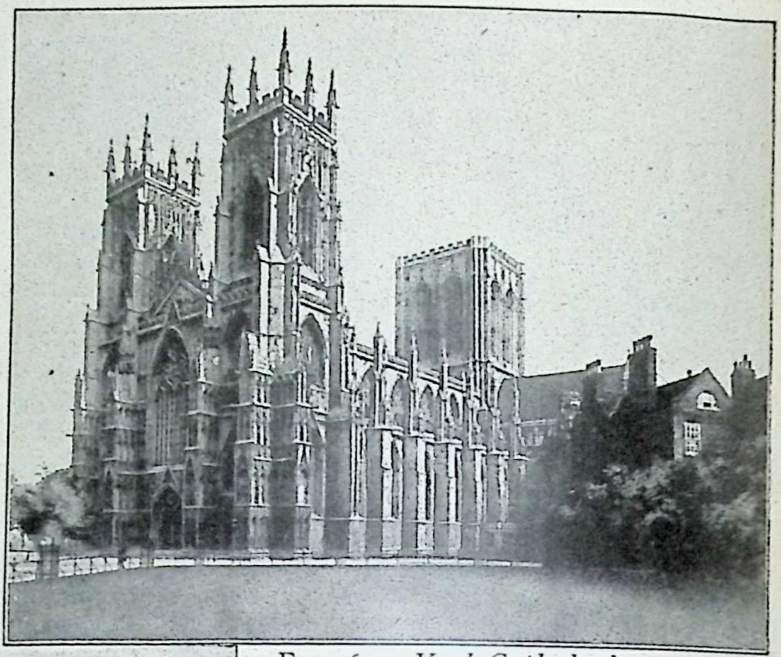

FIG. 264. *York Cathedral, one of the finest of all English churches.*

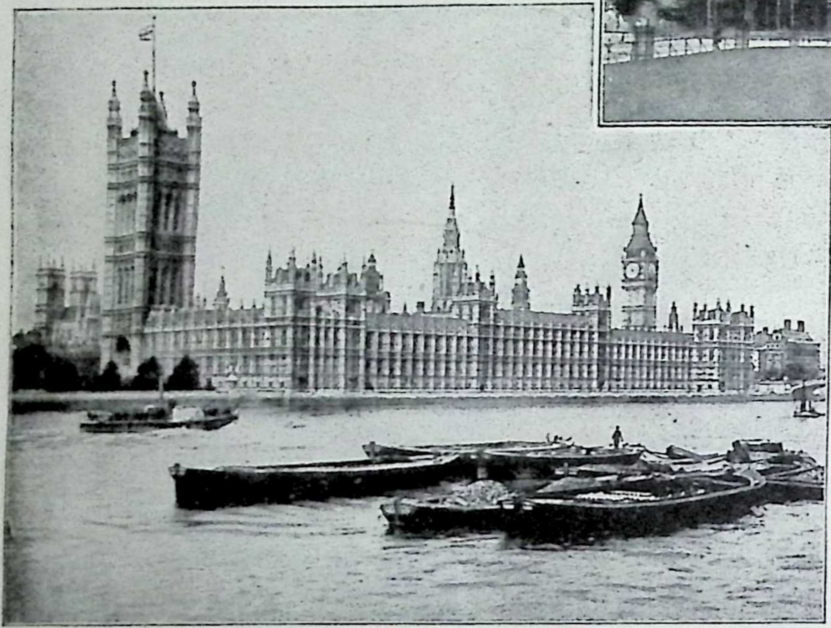

FIG. 265. *The English Houses of Parliament, situated on the Thames River, London.*

Commerce. Since the United Kingdom is an island containing a large population, engaged especially in manufacturing, it has to import much of its food and the raw materials used for its manufactures. Hence it has an immense commerce and important ports on all its coasts. It is nearer to America than any other European country, and is so close to Europe that it can easily carry on commerce with all its neighbors. Its principal port is *London*, the leading commercial port and the largest city in the world.

Liverpool, which is situated on the Mersey, about three miles from the Irish Sea, has a fine harbor and easy railroad connection with all parts of the country. It trades principally with America and West Africa.

Liverpool exports manufactured goods of all kinds, including machinery, and imports great quantities of food materials and cotton.

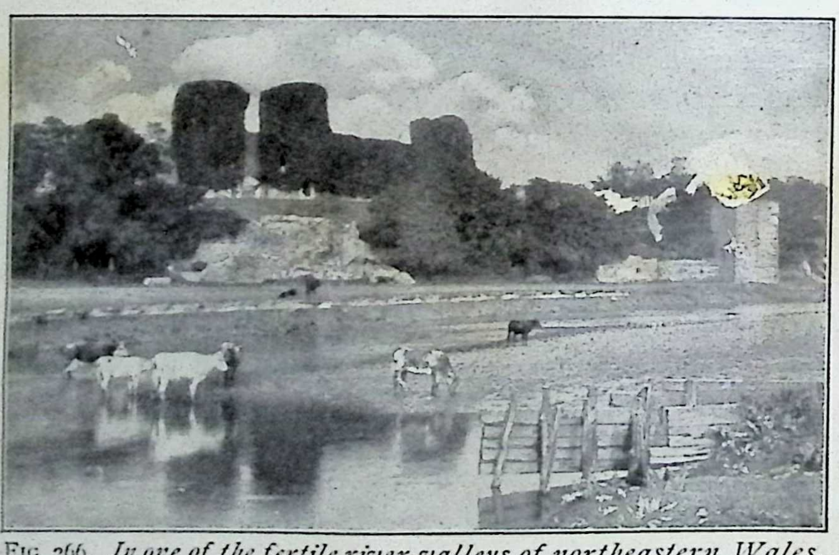

FIG. 266. *In one of the fertile river-valleys of northeastern Wales.*

Bristol was formerly an important port, and is interesting because it was from here that the Cabots set sail on their first exploring trip along the eastern coast of America.

Cardiff, in Wales, exports more coal than any other port in the world.

The leading port of southern England is *Southampton*, at which nearly all vessels plying between Germany and America make regular calls.

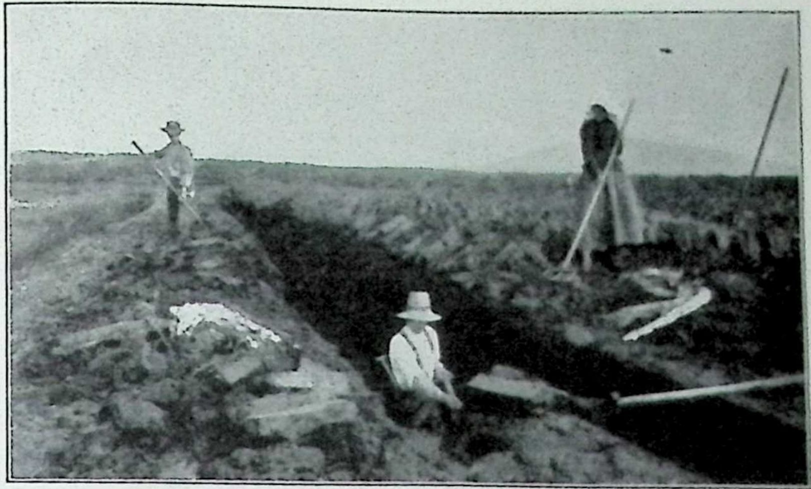
FIG. 267. *Cutting turf for peat in Ireland. The dried turf or peat is used for fuel in most districts.*

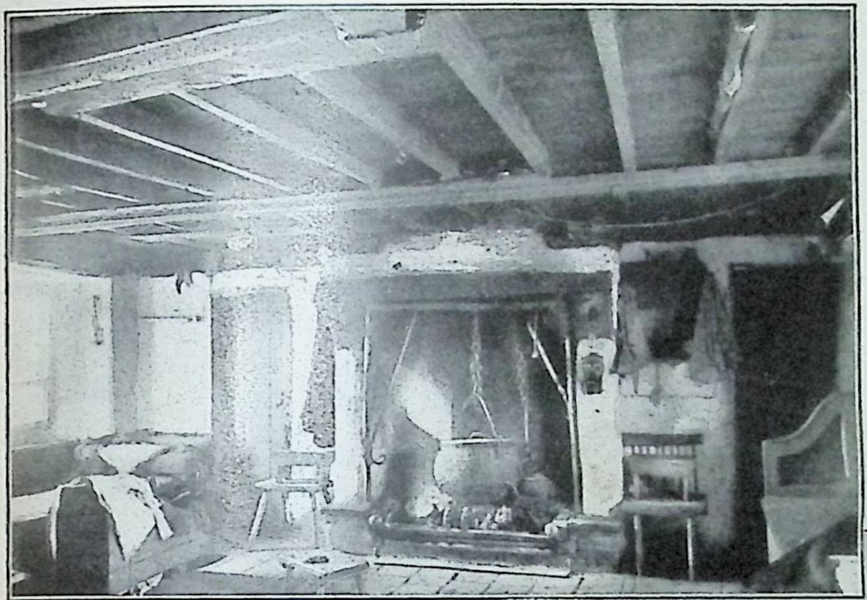
FIG. 268. *An Irish farm kitchen with its open grate for peat.*

Scenery. The scenic regions of the United Kingdom chiefly visited by tourists are the highlands of Sc[illegible]e Orkneys and the H[illegible] coast of Scotland, [illegible] lakes of northwestern England, and the mountains and valleys of Wales. (See Figs. 256 and 266.) In all these regions there are rugged slopes and many rushing streams of great beauty.

In the northwest of England is a specially beautiful region called the *Cumbrian Mountains*, but more widely known as the *English Lake District*. (See Fig. 256.) Here the river valleys contain many beautiful lakes similar to those in the Adirondack Mountains in New York state.

Tourists visiting England are very much interested in the many places scattered through the country that are famous because of some historical event. London is now visited more than any other

FIG. 269. *The Killarney Lakes in Ireland, famous for their beauty and much visited by travelers.*

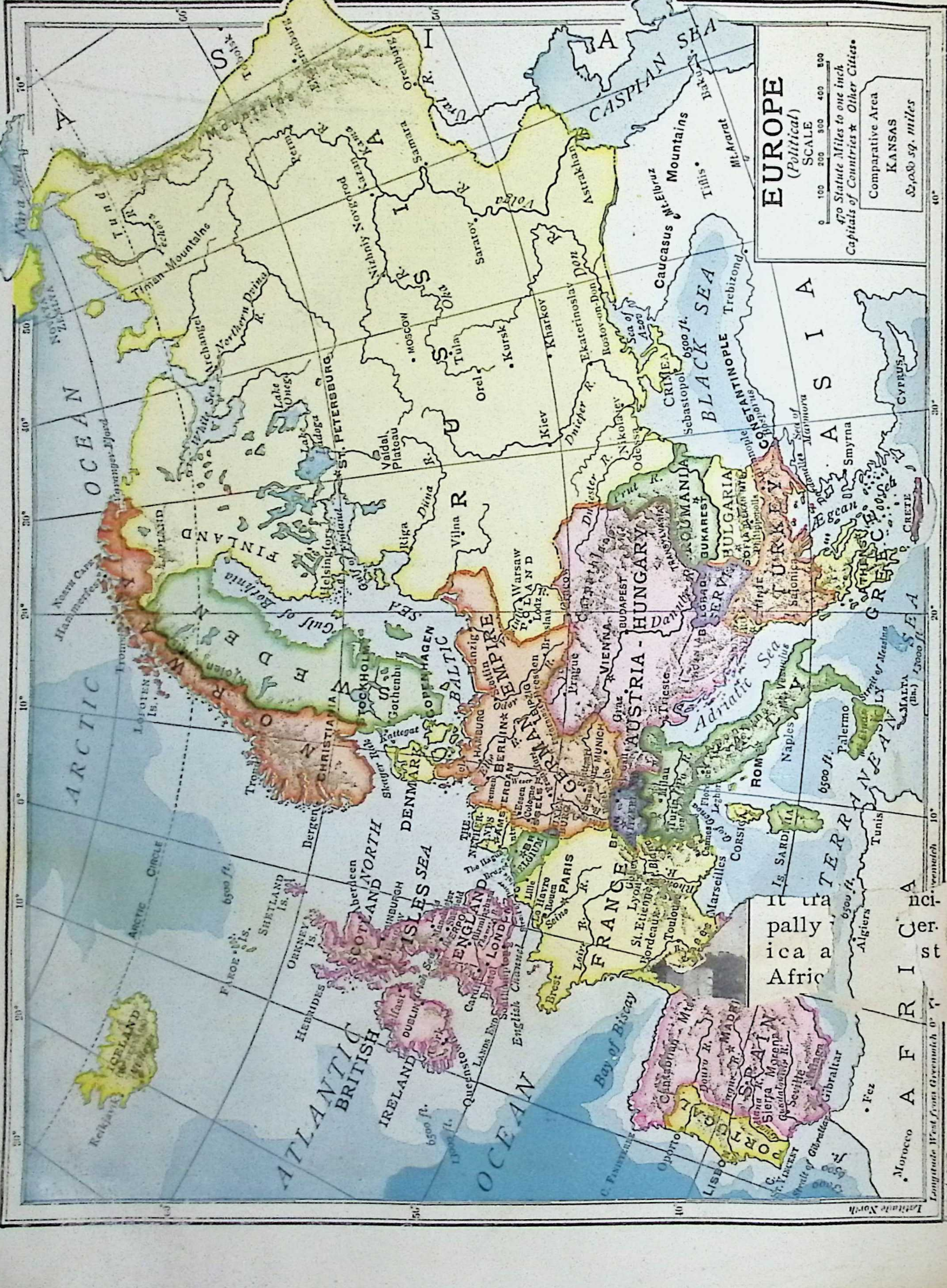

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FIG. 270.

city. The Houses of Parliament, in which the officers of the government meet to make laws (see Fig. 265), as they do in the Capitol at Washington, D. C., the many other government buildings, and Westminster Abbey (see Fig. 263), in which the kings and queens and other noted people are buried, are the most interesting places in London. Many of the towns scattered throughout England contain beautiful cathedrals. (See Fig. 264.)

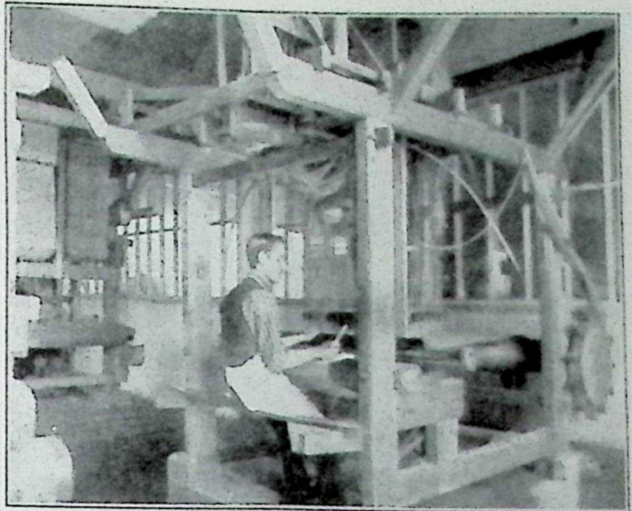

FIG. 271. *Weaving Irish linen in a Belfast mill.*

Ireland. Ireland is often called the "Emerald Isle" because it is so green, owing to the moisture in the air that causes the grass to grow luxuriantly. Ireland is a broad plain surrounded by a broken ring of mountains that is highest in the southwest. The country contains many bogs, from which peat is cut and dried for fuel (see Figs. 267 and 268), and many lakes that make certain parts of the country very beautiful. The most important lakes are those of Killarney (see Fig. 269) in the southwest.

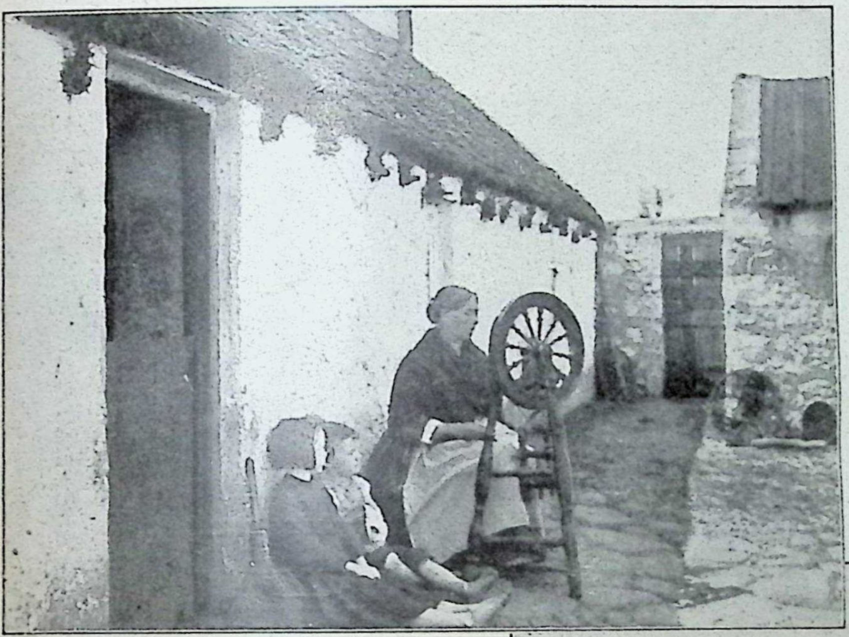

FIG. 272. *Irish country woman spinning outside her cottage door.*

The chief exports of Ireland are flax, cattle, butter, and bacon. The flax is spun and woven into linen or made into lace at some of the larger cities. (See Figs. 271, 272, and 273.) The larger part of the lace-making is done by the people in their homes.

Cities of Ireland. The largest city in Ireland is *Dublin*, the capital, which is famous for its brewing.

Belfast, the second city, is noted for its linen (see Fig. 273) mills and shipbuilding.

The harbor of Cork is *Queenstown*, which is a calling port for many vessels plying between Liverpool and America. (See Fig. 274.)

As a whole, the manufactures and commerce of Ireland are not very important.

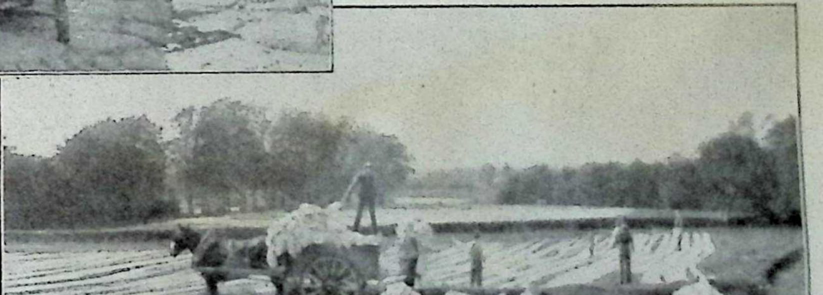

FIG. 273. *Spreading linen on a bleaching green at Belfast, Ireland.*

Suggestions for Review

(1) What countries are you thinking of when you speak of the United Kingdom? Of the British Empire? (2) In what part of the United Kingdom would you prefer to live? Why? (3) What part of the country has a climate most like that of the western United States? (4) What are the names of the northern islands of the United Kingdom? (5) Have you ever seen any animals that were named after these islands? (6) What names of places or rivers in England are the same as those in the United States? (7) Can you explain this? (8) From what countries does the United Kingdom import much of its food? (9) What section of the United Kingdom would you prefer to visit? Why? (10) Who is head of the British government? (11) Who preceded him? (12) Find out the complete title of the king.

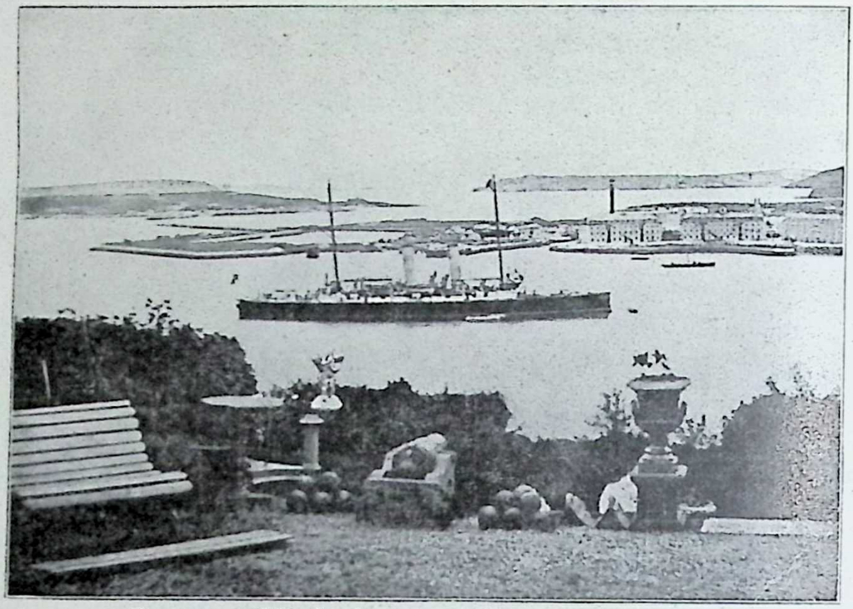

Fig. 274. *The harbor at Queenstown, Ireland.*

XXXV. FRANCE

Surface and Climate. France, a country nearly twice as large as the United Kingdom, is bounded by the Atlantic Ocean on the north and west and by high mountains along its eastern and southern borders. Along the southeastern border these mountains are very high, but those along the eastern and northeastern border are low. France also has a long stretch of coast on the Mediterranean. Near the coast is a narrow strip of low, flat, or rolling country containing several cities, but beyond the land is much higher. The southwestern coast is low, flat, sandy, and straight; the western is flat and moderately high, with a great many capes and bays. The northwestern coast is mostly straight and is bordered nearly everywhere by a steep cliff of white rock. France is lowest along the Atlantic coast and from that it rises eastward and southeastward either to the mountains along its eastern border or else to a high plateau which is called the Central Plateau.

France as a whole has a warm, moist climate favorable for agriculture. More than one-half of the land is devoted to that industry, the occupation upon which about one-half the population depends for a living. Southern France lies in the Hot Belt and has a climate favorable for raising such fruits as are found in California and in Florida.

Drainage. France has many navigable rivers which are connected by canals, so that internal water commerce is very easily carried on throughout the country. The Loire and the Seine are the leading rivers of the northern part of France. Southern France has only two large rivers, the Rhone and the Garonne, and therefore is not as rich in waterways as northern France.

Minerals. Coal is found in the north of France, and iron in the northeast. Though France is one of the largest coal-producing countries, it has to import much coal from other European countries to satisfy the needs of its own people. (See Fig. 218.)

Agriculture. Grain fields cover more than one-fourth of France. Many cereals are grown, but wheat is the principal crop. As the French people eat a great quantity of white bread, wheat is sometimes imported from the United States and from Russia to supply the needs of the people. Oats, barley, rye, and maize are also raised in large quantities.

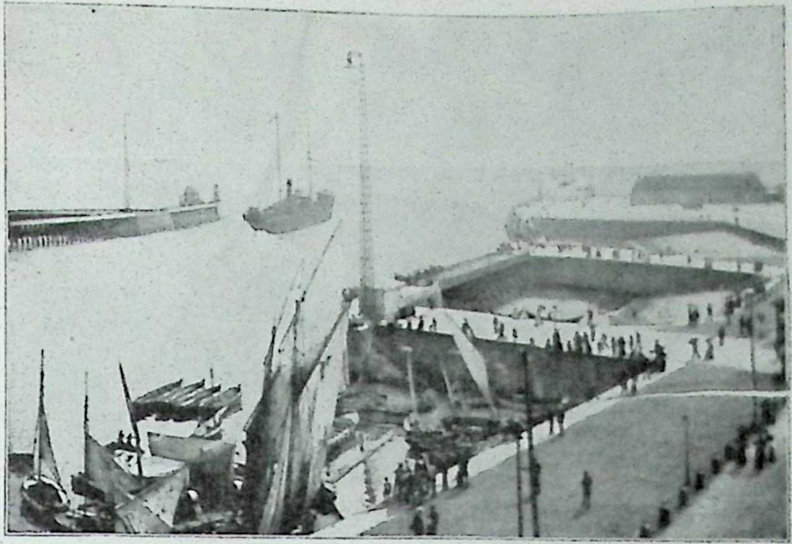

FIG. 275. *Entrance to the port of Le Havre, France.*

Sugar beets form the most important crop in the north of France, and are largely made into sugar for home use and for export. A portion of the crop is also used on the farms for making alcohol. Potatoes are also raised in large quantities.

France is the leading country in the world in raising wine-producing grapes, which are the chief crops in the valleys of the Rhone, the upper Seine, and the Garonne.

In the south of France olives, oranges, and mulberries are raised. The mulberry is a tree grown for food for silkworms, which wrap themselves in cocoons made of fine-spun silk.

Dairying. Great numbers of cattle and horses and sheep are raised throughout France. Cattle are found particularly in the north and northwest, and large quantities of butter are exported from the latter region. In Normandy, in the northwest of France, cheese-making is an important industry. In the south of France the famous Roquefort cheese is produced. It is made from the milk of sheep, and has to be cured in damp rock cellars. In the summer the sheep are taken up into the mountains to graze.

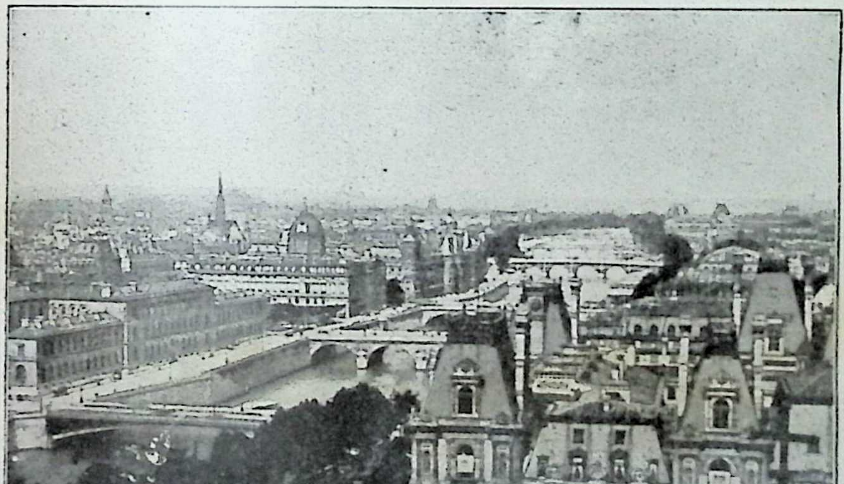

FIG. 276. *Looking over Paris. Notice the seven bridges crossing the Seine, and the Eiffel Tower in the distance.*

Manufacturing. Owing to its soil products which furnish raw materials, its coal, and in certain regions to its excellent water power, France is important for its manufactures.

Lyons, the third city of France, is one of the most famous silk-producing cities of the world. *St. Etienne* is noted for its ribbons.

Rouen is the largest cotton-manufacturing city, and *Lille* is also important for cotton goods.

Commerce. France is the fourth country in the world in commercial importance. It has several good ports.

Paris, on the river Seine, is the largest city and the capital of France. (See Fig. 276.) It is the

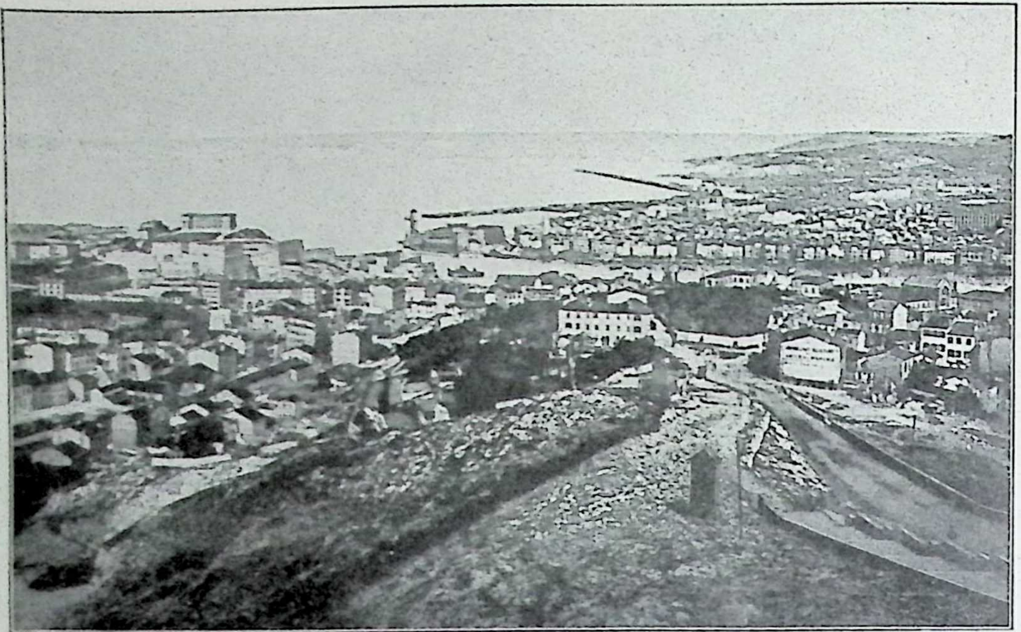

FIG. 277. *Marseilles, on the Mediterranean. A very important commercial city for trade between Europe and the East.*

third city in commerce and is an active manufacturing point. Paris is known especially for its great beauty, it being one of the most attractive cities in the world, with its broad streets, famous public parks, and numerous monuments.

Calais, a seaport on the northwest coast, because of its nearness to England, is the continental terminus of the leading steamship line which crosses the Straits of Dover.

Le Havre, the second commercial city, is the principal French port (Fig. 275) carrying on commerce with America, and receives from the United States great quantities of cotton and wheat. It has also developed extensive flouring mills.

Marseilles (Fig. 277), the chief city in commerce, is the leading port for trade with China, India, and the East. This trade comes through the Suez Canal and Red Sea from the Indian Ocean.

Bordeaux has a large amount of trade with South America.

Scenery. Although we usually think of Paris as the one place in France most interesting to visitors, there are many districts which are famous for their beauty.

The country provinces of northwestern France, with their pleasing farms and farmers, or peasants, are regions well known to tourists. On the Central Plateau there are many old volcanoes, long since extinct, which are visited by large numbers of people because of their beauty and interest. Just to the south of the volcanic region is a region full of deep canyons and great underground caves, which is equally famous.

The coast of France to the east of Marseilles, known as the *Riviera*, is a renowned health resort, especially in the winter season, and *Nice* (see Fig. 279) and *Cannes* are the leading cities.

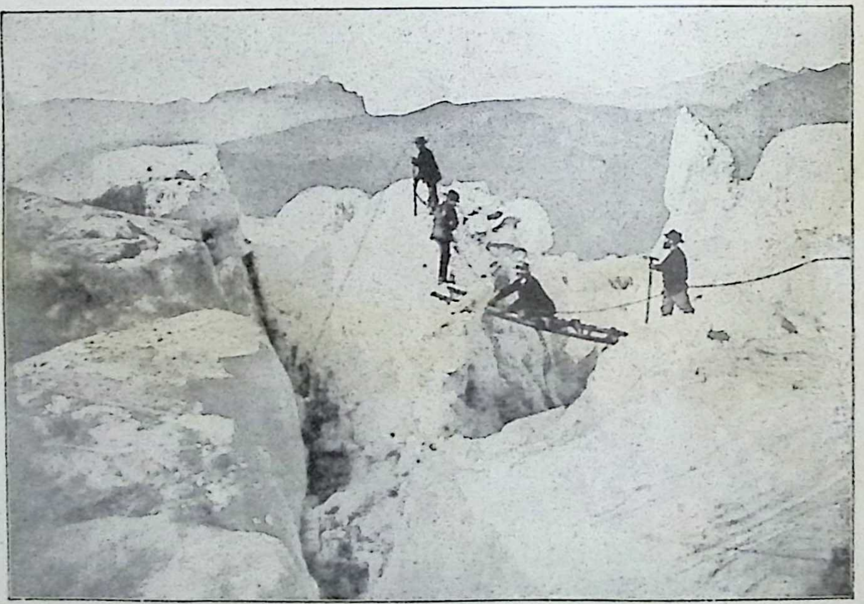

FIG. 278. *Climbing over the ice on Mont Blanc. The ladder bridges an ice crack over a hundred feet deep.*

The mountains in the east of France are a part of the great Alpine system, and are famous for their beauty. *Mont Blanc*, close to the border of Switzerland, is the highest mountain in Europe. It rises 15,780 feet above the sea level. (See Fig. 278.)

Suggestions for Review

(1) What have you ever seen that came from France? (2) What city in the United States is especially famous for its silk? (3) Why is Paris well situated for interior commerce? (4) Why has Le Havre more commerce with America than Marseilles? (5) Why is Marseilles the leading port for commerce with the countries of Asia? (6) Find out about the trip from Calais to Dover, England. (7) Why do many people make this voyage? (8) What part of France would you prefer to visit in summer? Why? (9) In winter? Why?

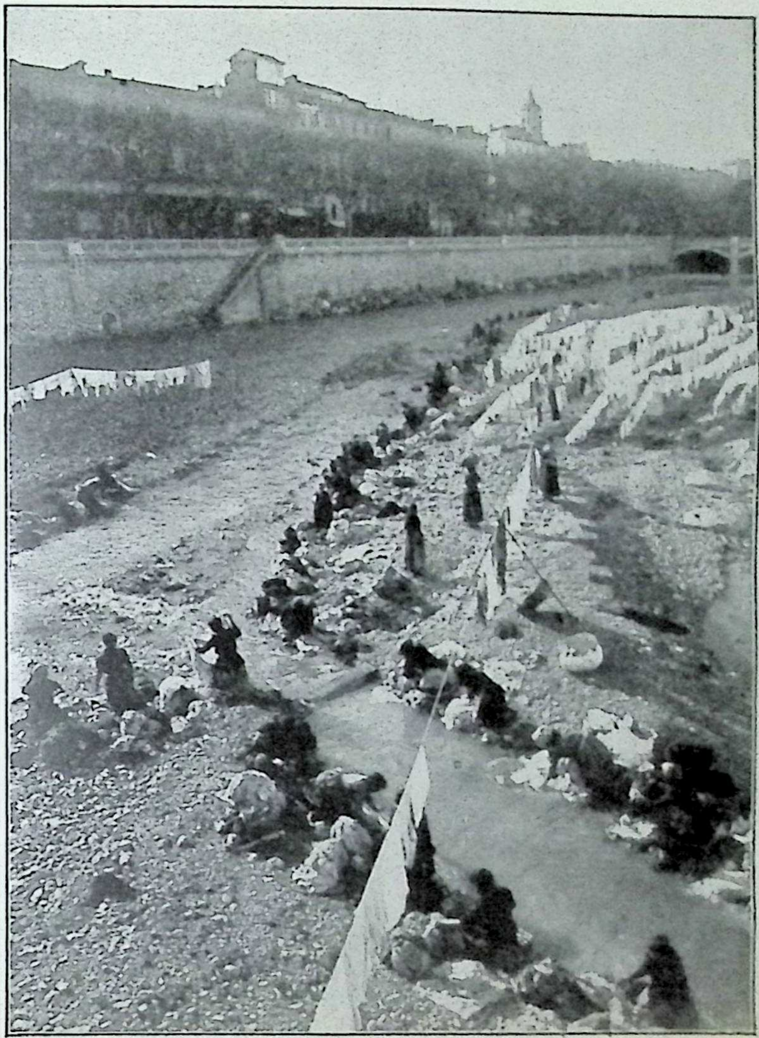

FIG. 279. *A public washing place on the Paillion River at Nice. This is a familiar sight throughout France.*

XXXVI. SPAIN AND PORTUGAL

The Iberian Peninsula. Spain and Portugal together form what is sometimes called the *Iberian Peninsula*. Except for a narrow lowland along part of the western and eastern coasts, the whole area is a high and dry plateau. On the plateau are many mountain ranges called *sierras*, running nearly east and west, and dividing the country into belts of highland and narrow valleys. As a result, cross-country travel is difficult, and the absence of means of communication makes the interior trade poor

The rocks of the plateau contain great mineral wealth (see Fig. 218), and some of the Spanish mines have been famous for centuries. The principal mineral products are coal and iron from the north of Spain, and coal, silver, lead, and copper from the south. Quicksilver and zinc are also produced. The salt mines are valuable, as Spanish salt is considered the purest known.

The nations of Spain and Portugal were at one time very powerful, especially the former. Spain led in the exploration of America, and the Spanish language is still the national language of Mexico, as well as of several of the countries of South America.

The Spanish people are, as a rule, quick to act, like most of the people of warm countries. They are not, however, progressive in manufactures or commerce, and hence have not remained an important nation. The people are very religious and celebrate all the religious feast days with great eagerness. The gay colors worn by men and women on such occasions are very attractive, and add much to the beauty for which the Spanish people are so famous.

Occupations. In Spain and Portugal, as in France, more than half of the people live by agriculture, and therefore peasant life is the characteristic life of the nation. (See Fig. 280.) The more important agricultural regions are along the west coast, where there is plenty of rain, and on the east coast, where agriculture is carried on by means of irrigation. The irrigated land is so fertile that the eastern coast is commonly spoken of as "gardens."

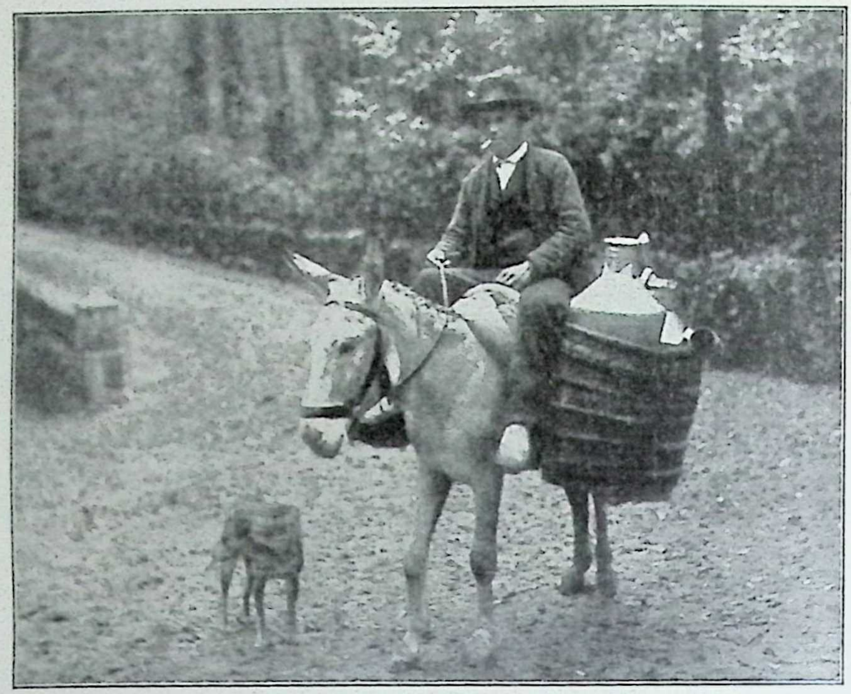

FIG. 280. *A peasant milkman in Spain. The cans are carried in large wicker baskets.*

The most important crop is the grape, from which some famous wines are made. *Valencia* and *Barcelona* are the chief wine-exporting cities of the eastern coast.

Olives, oranges, and lemons are the leading crops of the southeastern coast, and are exported from *Malaga* and Valencia.

On the plateau, wheat, horses, swine, and sheep are raised. Another important product of southern Spain and Portugal is cork, which is the bark of a special kind of oak tree, found mainly here and in Algeria.

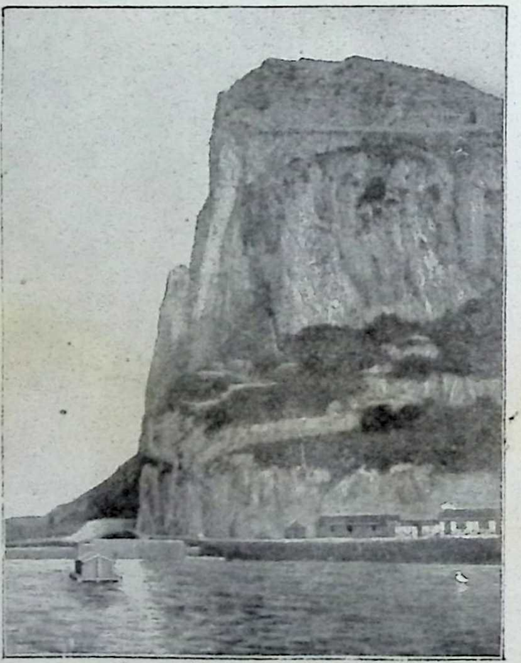

FIG. 281. *The rock of Gibraltar, which guards the entrance to the Mediterranean Sea.*

Manufacturing in Spain is undeveloped except at Barcelona, famous for its cottons and linens, and along the northern coast, where steel and machinery are made. Cottons, woolens, and silks are produced at Lisbon and Oporto.

Other Cities. *Madrid*, the capital and the largest city of Spain, is situated on the plateau. It is an important railway center and of historical interest, but owes its size mainly to the fact that it is the seat of the Spanish Government.

Lisbon, the capital of Portugal, has the best harbor and is an active port, but it is excelled in commerce by *Oporto*, which is nearer to the agricultural areas.

Gibraltar, a steep rock promontory running out from nearly the southern point of the coast, belongs to the United Kingdom, and has been strongly fortified as a British naval station. (See Fig. 281.) It is a very important fortification, because it controls the narrow entrance to the Mediterranean, through which must pass all the commerce of northern and western Europe with the southern countries of

Little boys hats.

Europe, with the East Indies, and also with China.

Suggestions for Review

(1) Why do we often speak of parts of central and southern America as Spanish America? (2) From where do Malaga grapes come? (3) Would you expect the rivers of Spain to be navigable? (4) From what port did Columbus sail? (5) What part of the United States has products similar to those of Spain?

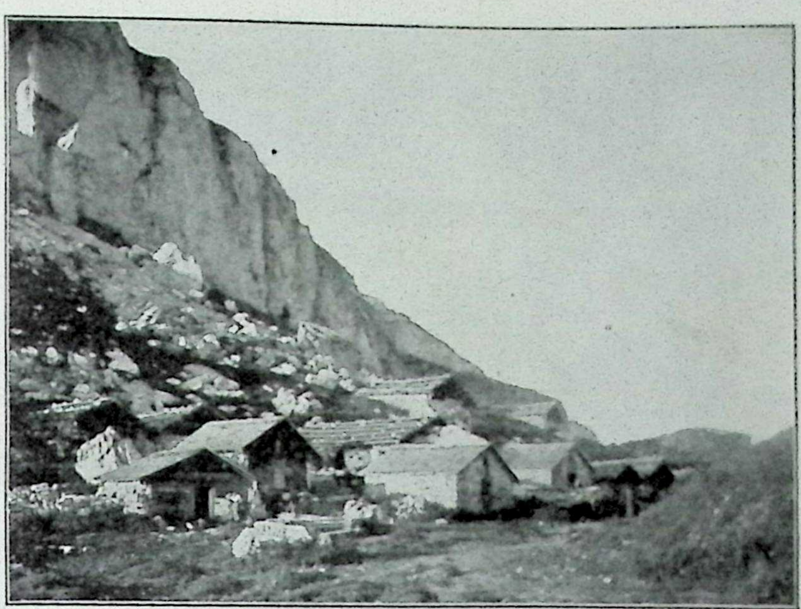

FIG. 282. *A mountain village in Switzerland. Cows are pastured on the stony slopes, and cheese is made in the huts.*

XXXVII.
SWITZERLAND

Surface and Drainage. Switzerland is a small country, not quite one-third as large as New York state, and yet it is one of the most famous countries of Europe. It lies among the mountains, with the high Jura Mountains on the northwest and the world-famous Alps on the south. Between the mountains is a high plain with many beautiful lakes. This plain is densely populated.

Owing to the mountains and an abundant rainfall, Switzerland has many small rivers that furnish water power. Thus the conditions are favorable for grazing and manufacturing, which are the principal occupations of the people.

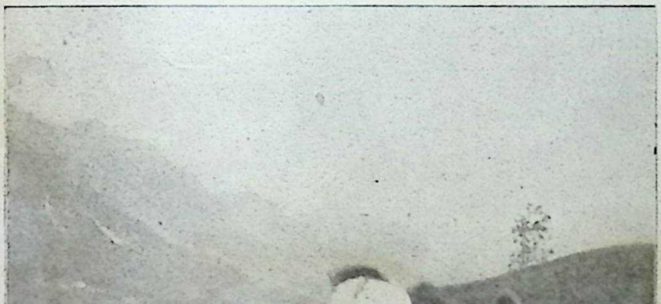

FIG. 283. *Haying in the Swiss Tirol Alps. The man has to carry the hay half a mile to his home.*

Occupations. Agriculture is the chief industry. Extensive orchards and vineyards are found on the sunny slopes of the Juras. Wine is made in small quantities, but does not enter much into commerce.

On the middle and higher slopes of the mountains great numbers of cattle are raised. The cattle are driven to the valleys in the winter, but in summer they are allowed to graze on the high mountain pastures. (See Figs. 282 and 284.) Here the famous Swiss cheese is made, which is one of the leading exports. Food for the cattle is so scarce that hay is cut wherever a few spears of grass can be found. In many places the herdsmen have to cut the grass by hand and carry it home on their backs, sometimes for long distances, as the slopes are too steep for horses. (See Fig. 283.)

Manufacturing is carried on in all the large cities and is a leading occupation of the country. It is also carried on extensively in the homes of the people, as the products are for the most part small goods that require great skill and care in making. Embroideries, watches and clocks, laces, plaited straw, and carved wooden articles are the most important manufactures.

Zurich and *Basel* are the centers of the silk industry, and *St. Gall* is famous for its cotton-spinning.

Geneva is noted for its watches. *Bern* is the capital of the country.

Commerce. The commerce of Switzerland is largely with its immediate neighbors, which in return send food and raw materials for manufacturing. Switzerland has no seacoast and hence no oceanic commerce. It has a series of excellent railroads and many miles of very wonderful carriage roads. These carriage roads wind up the more gentle slopes of the mountains to the very tops of the passes leading from one valley to the next, and are much used by tourists on foot.

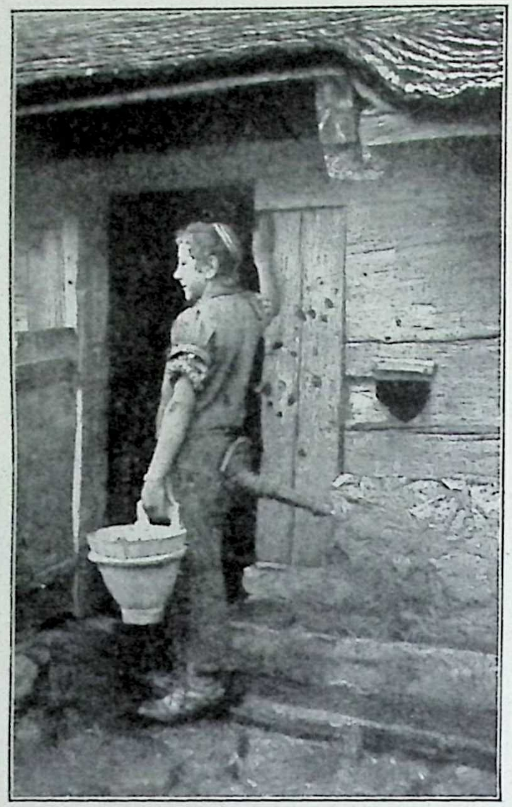

FIG. 284. *A Swiss dairyman entering his hut. Notice his curious milking stool and pail.*

Scenery. Switzerland is probably visited by more tourists each year than any other country in Europe. Its highest peaks and valleys are covered by glaciers which are very beautiful and easily reached. Hence they are visited by people from all parts of Europe and America.

The many lakes of Switzerland, of which Lake Geneva (see Fig. 285) is the largest, are deep set among the mountains and are very beautiful. Bordering the lakes or high among the mountains are the picturesque low houses, or *chalets*, of the mountaineers (see Fig. 286), which are often stables as well as homes. The people, as a rule, dress in their national costumes, which vary in different parts of the country, but are always striking in appearance.

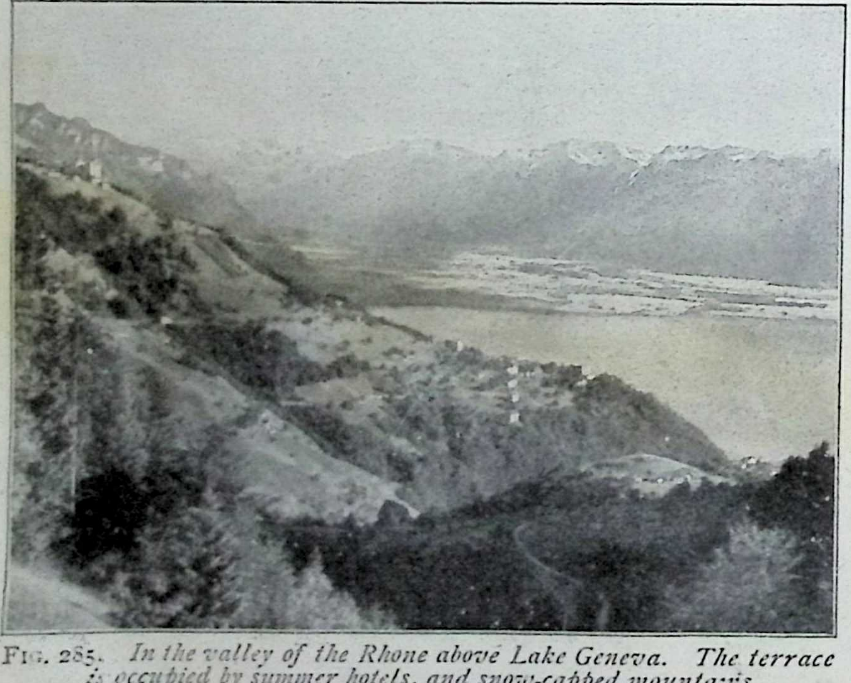

FIG. 285. *In the valley of the Rhone above Lake Geneva. The terrace is occupied by summer hotels, and snow-capped mountains are to be seen in the distance.*

Suggestions for Review

(1) In what way is Switzerland unlike any other European country we have studied thus far? (2) Why are the mountain passes important in Switzerland? (3) Have you ever seen toys from Switzerland? Of what were they made? (4) Why do people visit Switzerland in the summer more than in the winter? (5) Why do the people make cheese rather than butter in the mountains? (6) Why are Swiss guides usually secured to help in high mountain-climbing in other parts of the world? (7) Find out something about mountain-climbing on ice. (8) Have you ever heard of any famous lake in Switzerland which

has not been mentioned? (9) What famous Swiss scientist came to this country to live many years ago? (10) Find out something about some famous tunnels in Switzerland. (11) About how long does it take one to climb a high Swiss mountain? (12) Find out about the dangers of crossing glaciers.

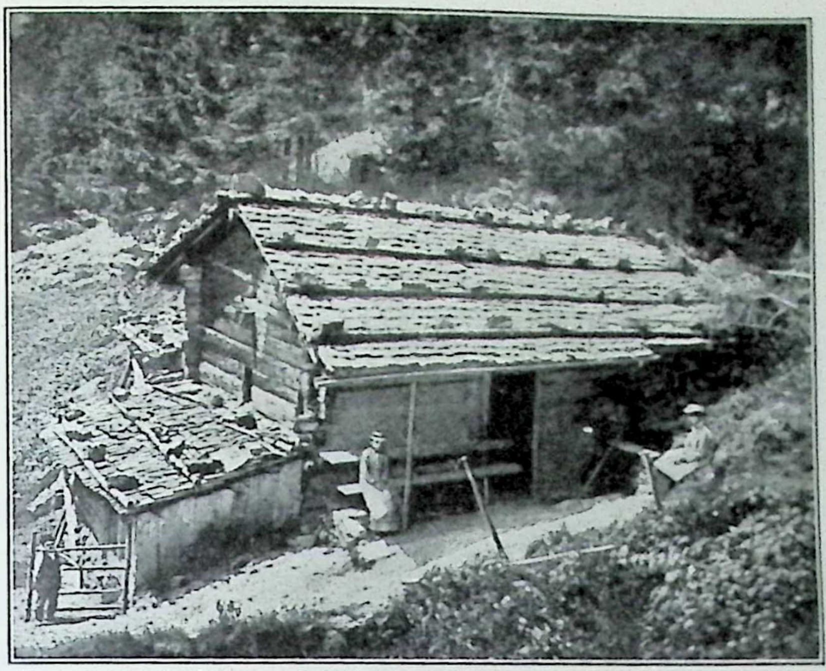

FIG. 286. *A characteristic house in Switzerland. The roof is held down by the weight of the rocks.*

XXXVIII. ITALY

Surface. The larger part of Italy is occupied by the Apennines, which are connected with the Alps at the north and extend throughout the length of the peninsula. Along the eastern and western coasts are narrow plains. The great plain of Italy, however, is that bordering the River Po and bounded by the Alps and the Apennines. Owing to its irregular coast, Italy has many fine harbors.

Occupations. Fishing is an important occupation, especially on the eastern coast, and the Italian people eat more fish than meat.

There is little mining, as few of the rocks are valuable. A very fine quality of marble, much used for sculpturing, is quarried at *Carrara* in northern Italy, and sulphur is extensively mined in the island of Sicily.

On the plains of the north, flax, hemp, and rice are the most important crops. In the warmer south, and about the Gulf of Genoa, which is also warm, oranges and lemons are raised. Olives are grown throughout the larger part of the country, and cotton is produced in southern Italy, in Sicily, and in Sardinia.

Italy is one of the leading countries of the world in producing raw silk and in wine-making.

The principal cities from which these products are exported are: *Genoa*, on the northern coast; *Venice*, which is renowned because it is built on a series of islands, so that all travel is by boat or *gondolas* on the winding canals (see Fig. 287); *Leghorn*,

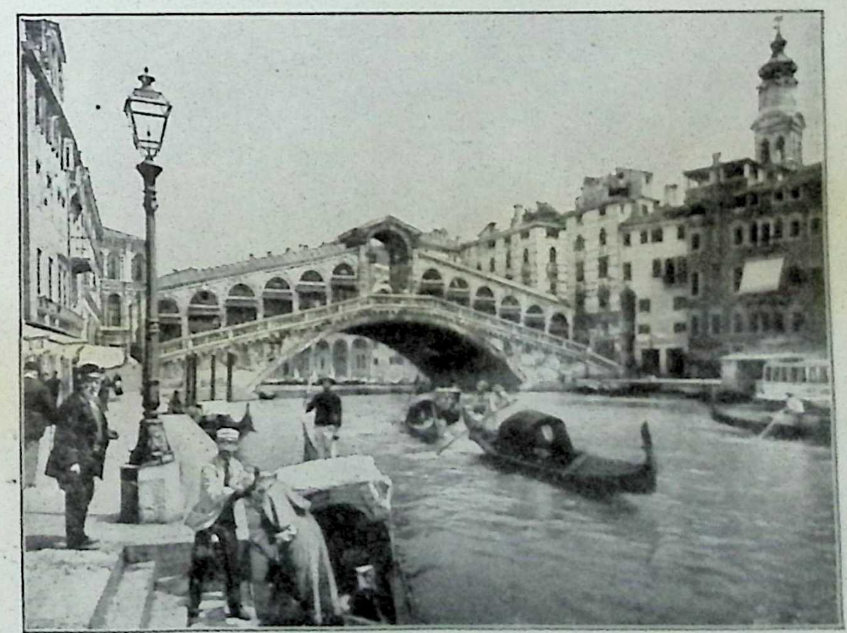

FIG. 287. *The Grand Canal, Venice. The Rialto bridge is shown in the background, under the roof of which are merchants' shops.*

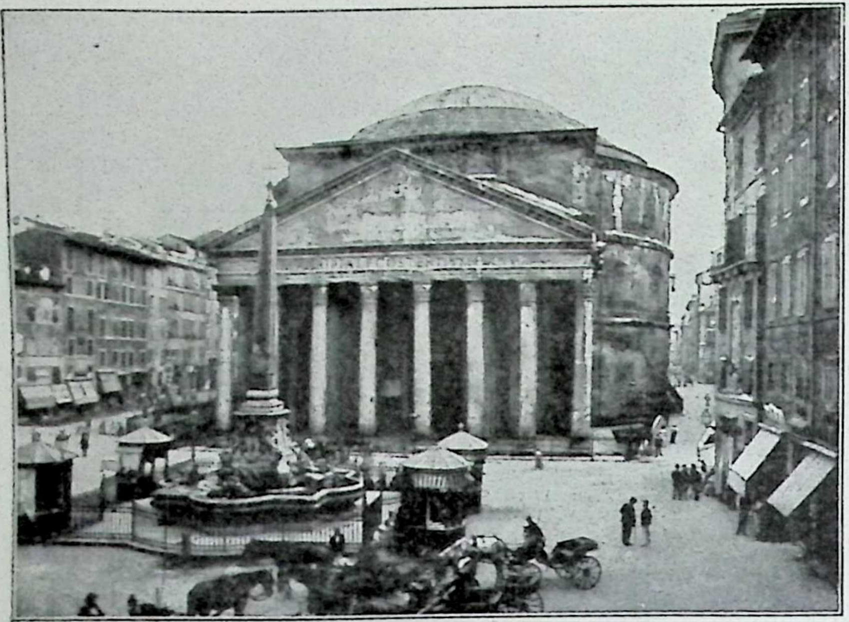

FIG. 288. *A square in Rome, showing the Pantheon, built in 27 B. C. The finest and best preserved work of Roman architecture.*

known for its straw goods; and *Naples*, with a very beautiful harbor.

Scenery. The most important city is *Rome* on the river Tiber. (See Fig. 288.) Rome is the home of the king, and also of the Pope, the head of the Roman Catholic church. It is much visited for its beautiful buildings, for its historical interests, and for the ruins of ancient Rome, which was at one time the chief city in the world.

Florence, in the center of a wine-producing area, is famous for its beauty and for its great art galleries.

Milan, in northern Italy, is the greatest trade center in Italy, owing to its excellent railroad connections with northern countries. It is noted for its beautiful cathedral.

Besides the many interesting cities, Italy contains two of the most renowned volcanoes of the world—*Vesuvius*, near Naples (see Fig. 289), and *Etna*, in Sicily. Both of these are active now. The latest severe eruption of Vesuvius was in 1906, when much property and many lives were destroyed. Naples was covered with fine volcanic dust, but the eruption was not as severe as the great eruption nearly two thousand years ago, when two cities were destroyed.

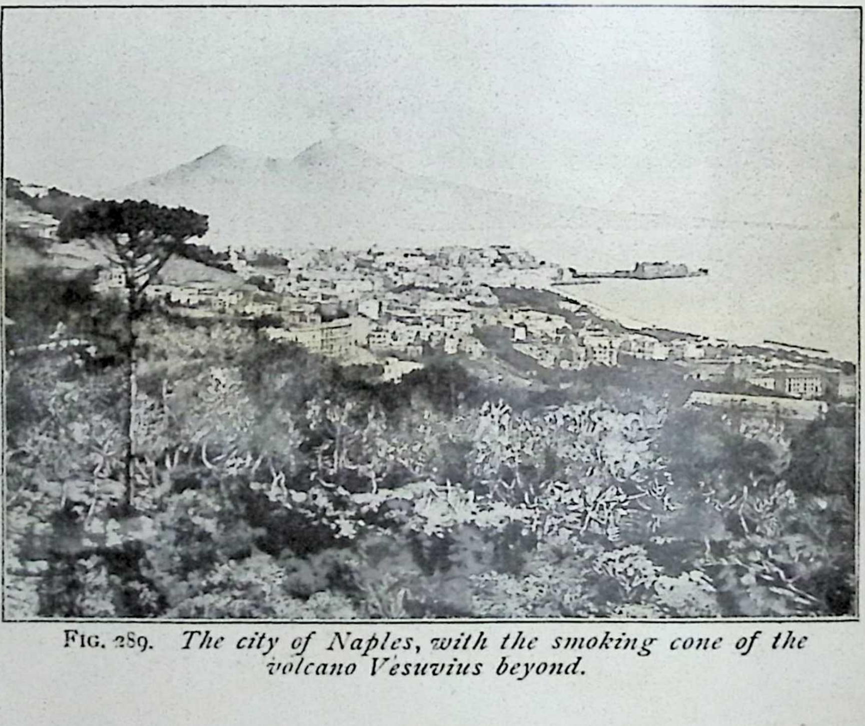

FIG. 289. *The city of Naples, with the smoking cone of the volcano Vesuvius beyond.*

Suggestions for Review

(1) What river in America is like the Po in some respects? (2) Find out some interesting fact about Venice. (3) About Rome. (4) About Vesuvius.

XXXIX. AUSTRIA-HUNGARY

Surface and Climate. The dual state of Austria-Hungary is made up of two countries, Austria and Hungary. The high Alps form the boundary on the west, and the great range of the Carpathians is on the east. The Transylvanian Alps form the southeastern boundary.

A large part of Hungary consists of an extensive lowland between the Carpathians and the eastern Alps. Through it flows the *Danube*, the greatest river of southern

Europe, which rises in southwestern Germany and flows into the Black Sea. The Danube (see Fig. 291) flows through the Transylvanian Alps in a narrow gorge, known as the Iron Gate. A canal has been built here so that commerce is no longer interrupted by the rapids that obstruct the river.

Agriculture and Grazing. Owing to the many conditions which favor agriculture and grazing, more than two-thirds of the people of Austria-Hungary earn their living by carrying on these two industries.

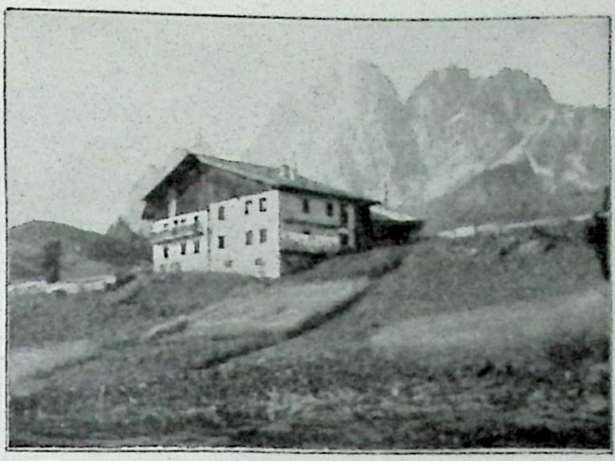

FIG. 290. *A farmhouse in the Austrian Alps.*

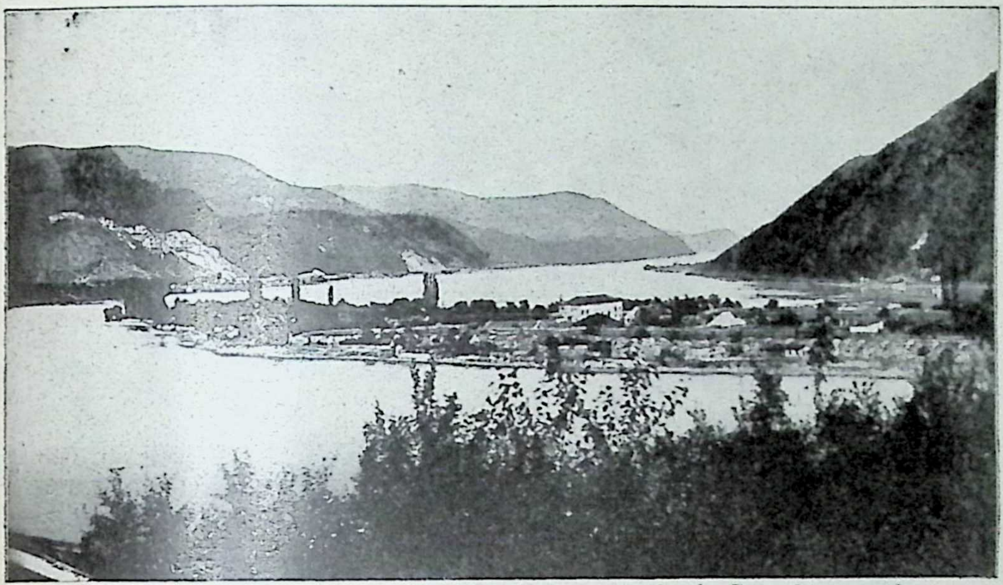

FIG. 291. *The Island of Ada-Kaleh, Austria, in the Danube near the Roumanian frontier.*

The great plains of Hungary, with their good soils, favorable climate, and gentle slopes, form one of the great wheat fields of the world. In many ways they remind us of the great grain-producing plains of North Dakota and Manitoba in America.

Rye is raised on the small farms of the mountain regions and is a very important product. A large part of the people eat dark rye bread rather than white wheat bread. Oats are raised in northern Austria and Hungary. Wine is produced in large quantities in Hungary.

In the high mountain pastures cattle are raised for dairying, as they are in Switzerland, and horses and sheep in great numbers graze on the extensive plains of Hungary.

Lumbering and Mining. In the extreme northwestern portion of Austria, and on the higher slopes of the Carpathians, there are extensive forests. The natives are skillful in carving wood into articles of value. The larger part of the forest product, however, is exported to France, to Italy, and to Germany to be manufactured into wine and beer casks.

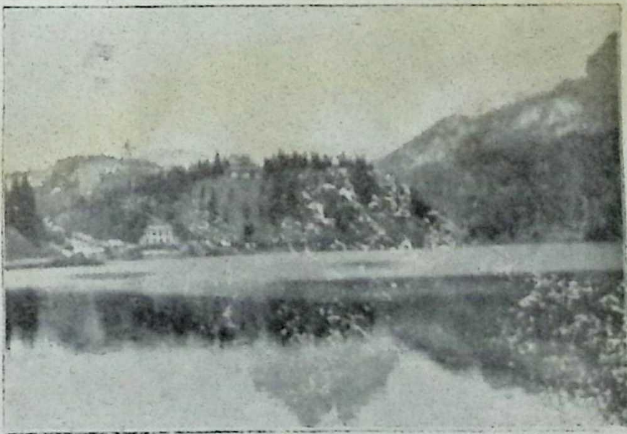

FIG. 292. *A scene in a part of the Alps famous for its beautiful scenery.*

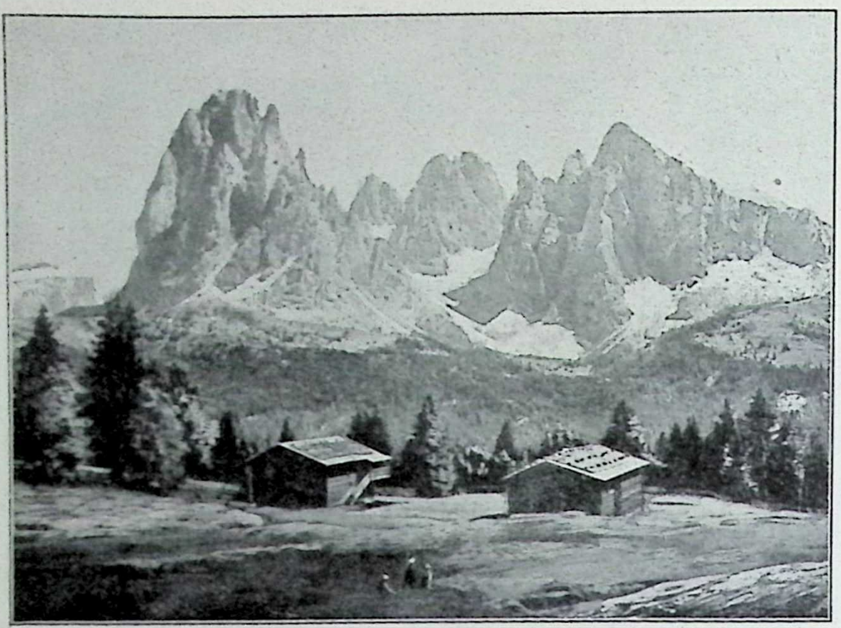

FIG. 293. *The magnificent peaks of the Austrian Alps.*

The country is rich in coal, iron, and salt, mined especially in northern and central Austria. Gold, silver, and zinc also exist.

Manufacturing and Commerce. The northern coal region is an important manufacturing area (see Fig. 118), especially for textiles. Carpets and silk are manufactured in *Vienna*, the capital and chief center of trade.

Machinery, tools, and other iron products are made at *Vienna*, *Graz*, and *Prague*, and flour-milling is an important industry at *Budapest*, the capital of Hungary, which is situated in the center of the great Hungarian wheat district.

In northwestern Austria the beautiful colored Bohemian glass is produced. Leather goods and gloves, made in unusually large quantities in Prague and Vienna, are among the more important exports of the country.

Scenery. Western Austria-Hungary is much like Switzerland so far as its scenery is concerned. It is especially famous for its beautiful mountains, great glaciers, and picturesque mountaineers, and is much visited by travelers. In the southeastern section are the famous *Austrian Alps* (see Fig. 293), which are full of high valleys and very steep, pointed mountain peaks. (See Figs. 290 and 292.)

Suggestions for Review

(1) Compare Austria-Hungary with Switzerland. (2) Why is Trieste not so important a port as Hamburg? (3) Find out something about the Iron Gate. (4) Why are the occupations in the Tirol similar to those in certain parts of Switzerland?

XL. GERMAN EMPIRE

Surface and Climate. The German Empire, or Germany, is in many ways the most important country of the mainland of Europe, and is one of the leading commercial nations of the world. The country is high to the south, where it borders on the Alps, and slopes gradually to the north. Along the North Sea and the Baltic it is a great lowland.

Owing to the fact that the moist winds from the Atlantic can sweep across the plains of Germany there is plenty of rainfall. The winter climate is everywhere mild. Southern Germany has nearly the same climate as northern Germany, because it is higher and therefore

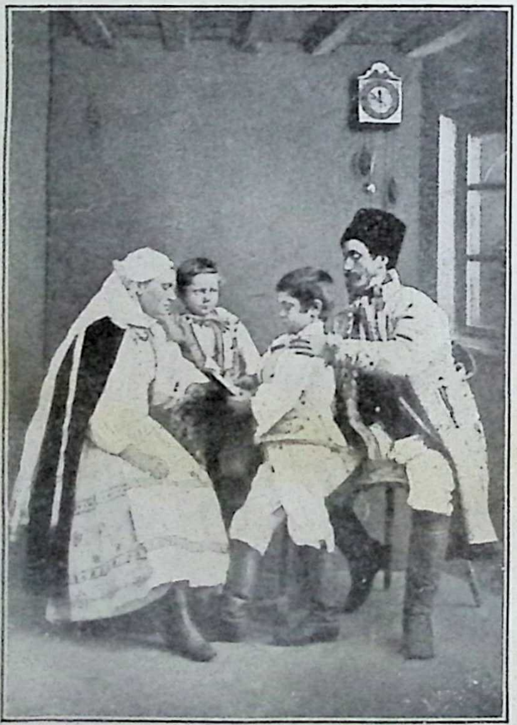

FIG. 294. *In the home of a mountaineer peasant family, southern Germany.*

cooler than it would be if it were a lowland.

Germany has many large rivers that flow into the Atlantic or Baltic. These rivers are navigable throughout a large part of the empire, and are so thoroughly connected by canals that internal water commerce is very important. The *Vistula* and the *Danube* are important commercial routes for trade with eastern Europe.

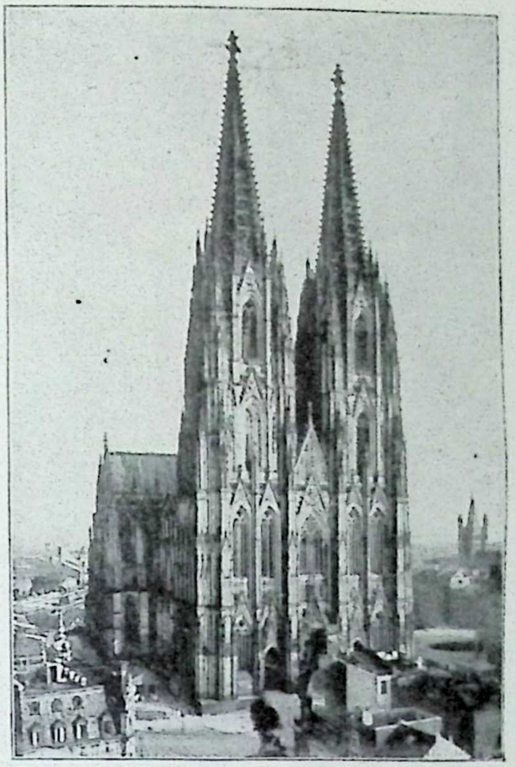

FIG. 295. *Cologne Cathedral. This cathedral, begun in the year 1248, was completed in 1880.*

A large part of the empire is devoted to agriculture (see Fig. 124), the products of which are chiefly manufactured at home. The richness of Germany in coal and iron favors the growth of manufacturing, so that this industry is an important one.

Agriculture and Grazing. Less than one-half the people live on farms, but the agricultural products are large. The chief crop is sugar beets, which are raised in such great quantities that Germany supplies one-third of all the beet sugar of the world.

Rye and potatoes, raised extensively on the northern plains, form the chief food of the people. More potatoes are produced here than in any other country. Wheat, barley, wine, hops, and tobacco are produced in abundance in the upper Rhine valley, and oats are grown almost everywhere. Germany is also an important cattle-raising country and produces large numbers of horses, cattle, sheep, and swine.

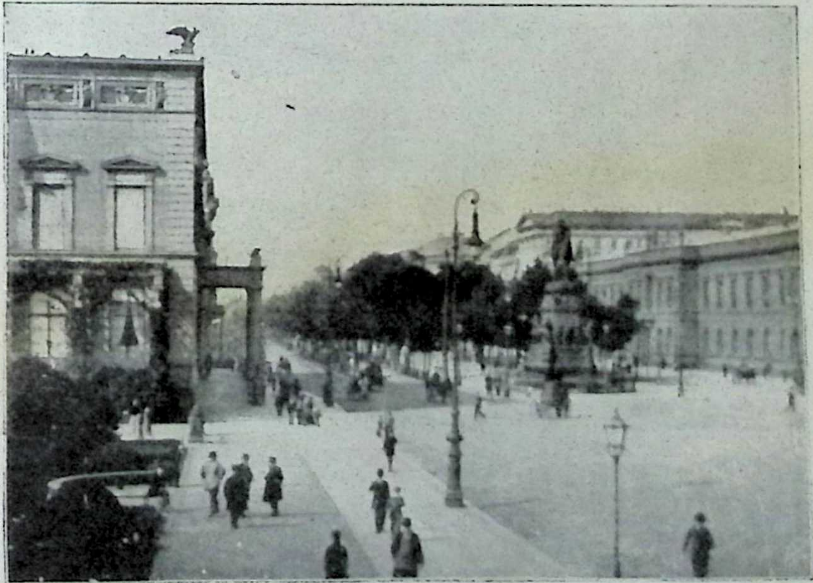

FIG. 296. *Berlin. This avenue, "Unter den Linden," is one of the famous streets of the world.*

Lumbering and Mining. About one-fourth of the area of Germany is covered with forests, and forest products are therefore of great importance, especially in southern Germany.

Coal is mined in the southeast and west, the western coal fields being the most important. Iron is mined in the east, and largely in the west.

Manufacturing. Iron and steel products and cotton goods are the chief manufactures. *Essen*, with the famous Krupp steel works, is the leading steel-making city of the world. *Strassburg* is important for its iron goods, machinery, and leather.

Germany stands second to the United Kingdom in shipbuilding, the largest works being at *Stettin*, *Hamburg*, *Danzig*, and *Kiel*.

Dresden is noted for its fine furniture, metal work, and paper-making. It also contains a very famous art gallery. *Leipzig* is the leading book-printing city, and is the

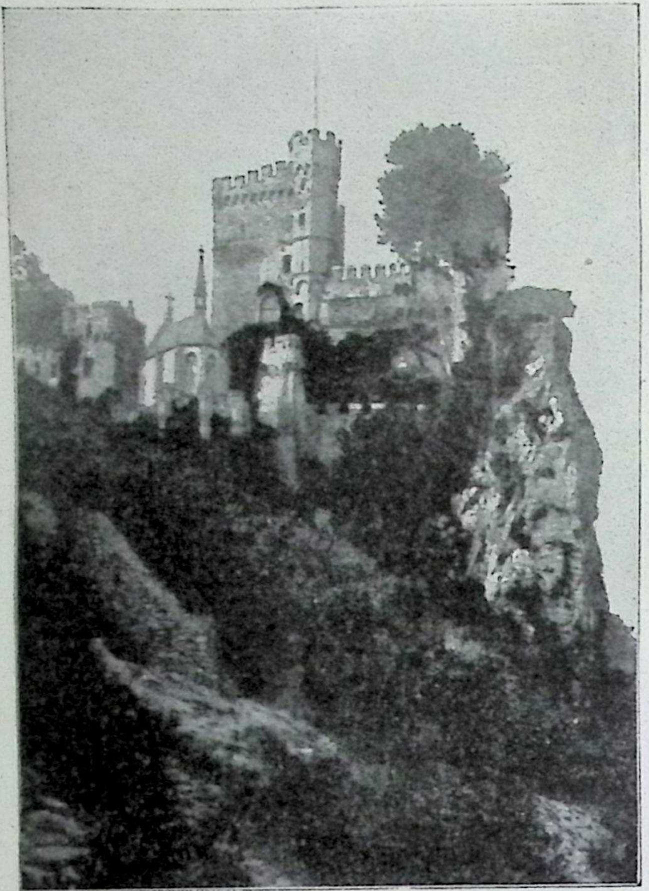

FIG. 297. *Rheinstein, a picturesque castle crowning a rocky height overlooking the Rhine.*

chief fur market of the world. *Cologne* is the city that first gave us the famous perfume, *eau de cologne.* It also contains a very beautiful cathedral. (See Fig. 295.)

Commerce. The leading seaports of Germany are *Hamburg*, *Bremen*, and *Stettin.*

Hamburg is the third port of the world in commerce, and carries on a large and profitable trade with the United States.

Germany imports from the United States large quantities of cotton, cereals, and meats.

Berlin, the capital of Germany, is one of the most important business cities of the world, and is the greatest railroad center of Germany. (See Fig. 296.)

Scenery. Nearly all the large cities of Germany are noted for their picturesque buildings and are much visited by tourists. The valley of the Rhine is one of the most beautiful valleys in Europe and is visited by thousands of foreigners each year. The valley is narrow and winding, with villages along the river and on the slopes, while many castles placed on commanding points add to the beauty and interest of the region. (See Fig. 297.)

Suggestions for Review

(1) Why would Germany be an interesting country to visit? (2) What have you ever seen that came from Germany? Was it a manufactured or an agricultural product? (3) Hamburg is a great cotton importing port. Where does most of the cotton come from? (4) Where are the leading ports of Germany situated?

XLI. *BELGIUM, THE NETHERLANDS, AND DENMARK*

Surface and Climate. *Belgium*, the *Netherlands*, and *Denmark* are nearly all lowland; in fact, the word *netherlands* means *low countries.* In the Netherlands and Belgium the best land is below sea level, and great banks of earth called *dikes* have been

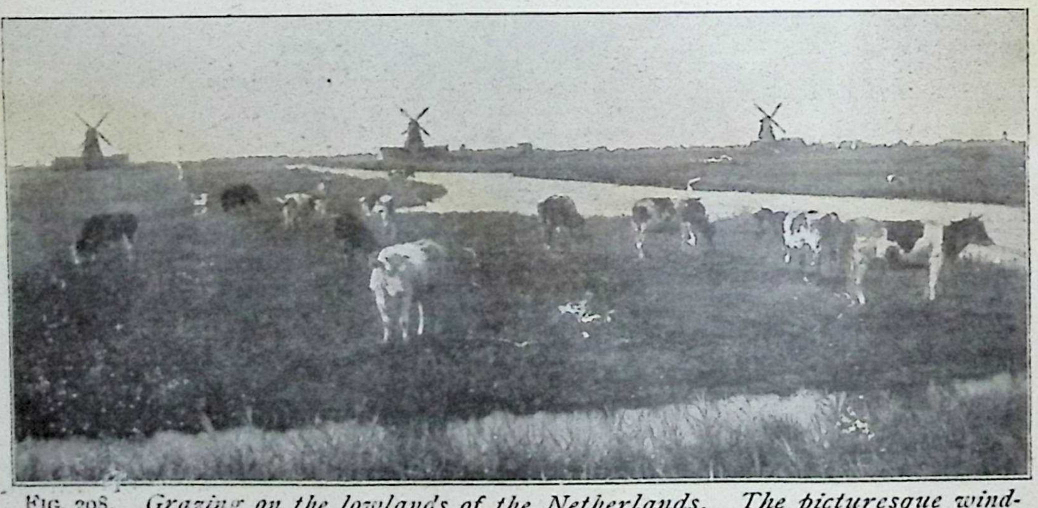

FIG. 298. *Grazing on the lowlands of the Netherlands. The picturesque windmills are very common in this region.*

built to keep it from being flooded by the ocean and river waters.

The land is so flat that the wind can blow over the whole country without being turned aside by any hills. Hence the people everywhere use windmills for power, as they are sure of wind enough to turn the mills at any time. (See Fig. 298.)

Throughout these countries, as in the low parts of Germany, the summer climate is warm and very moist, so that grass and cereals grow abundantly. Hence the principal occupations in these three countries are agriculture and dairying.

Agriculture and Dairying. Dairying is more important than agriculture, though sugar beets, cereals, flax, hemp, and vegetables are raised abundantly.

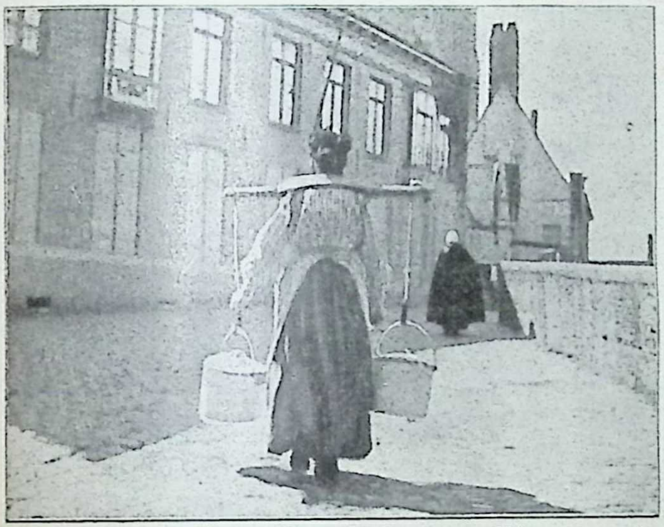

FIG. 299. *A milk peddler at Bruges. The crescent-shaped yoke rests upon the shoulders.*

Belgium is noted for its fine draft or work horses, and raises many sheep in the higher land of the southeast.

The Netherlands and Denmark are both noted for butter-making, and Danish butter can be sent to any part of the world without spoiling. The Netherlands makes the well-known round Edam cheeses, which are perhaps the most common imported cheeses in the United States.

Denmark also raises horses, sheep, and poultry. The vegetables, eggs, butter, and poultry are largely sent to neighboring countries and especially to the more important cities.

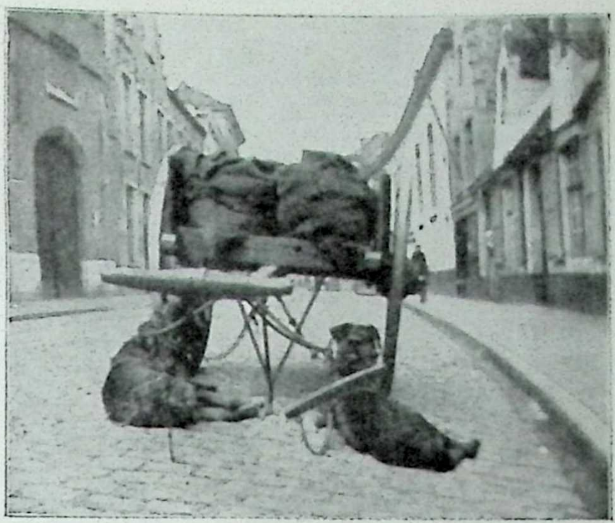

FIG. 300. *A market cart in Bruges, Belgium, drawn by dogs.*

Other Industries. Belgium has mineral wealth of importance. Coal and zinc are mined extensively and iron in limited quantities; building stone is quarried.

The long coast line of the Netherlands has made the people great fishermen. They get oysters and herring off their own shores, but have to sail to the far north for cod and other deep-sea fish.

Manufacturing (see Fig. 118) amounts to but little in the Netherlands and Denmark, but is very important in Belgium.

Copenhagen is the leading manufacturing town in Denmark, and leather and machinery are the chief products.

Commerce. Internal commerce is very easily carried on because of the rivers and the great numbers of canals, which run in almost every direction. (See Fig. 298.) Oceanic commerce is important in Belgium and the Netherlands.

Antwerp, the chief seaport of Belgium, is the greatest ivory market in the world, because Belgium receives great quantities of ivory from the Congo Independent State in Africa.

The Netherlands has a large amount of commerce, though only a small part of it is g b G.

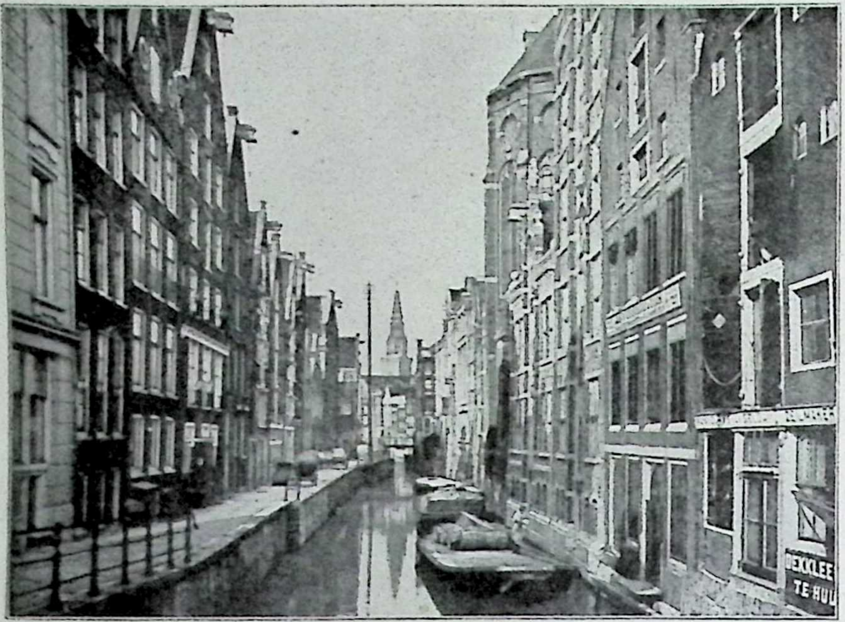

FIG. 301. *The city of Amsterdam. Much of the commerce is carried on by the use of the numerous canals.*

in products of the country. The country has very important colonies in the tropical East Indies, from which it receives great quantities of coffee, tea, indigo, gums, dyewoods, and spices. The larger amount of these imports is reshipped to other parts of the world, thus giving *Rotterdam* and *Amsterdam* (see Fig. 301) an important world trade.

Suggestions for Review

(1) Find out some interesting facts about the Dutch people, as the inhabitants of the Netherlands are called. (2) Find out about winter sports in the Netherlands. (3) What country have we already mentioned as a colony of the Netherlands? (4) What country have we studied about that belongs to the kingdom of Denmark?

XLII. NORWAY AND SWEDEN

Surface. The kingdoms of *Norway* and *Sweden* occupy the peninsula of *Scandinavia*.

Norway is a mountainous country, with many long, narrow, steep-sided river valleys, the lower portions of which are often occupied by salt water for more than one hundred miles inland. These drowned valleys, known as *fiords*, are very beautiful and form excellent harbors. Thus Norway is naturally a country where the people largely lead a seafaring life. (See Fig. 302.)

The eastern part of Sweden is in general a low plain and is an agricultural country. The mountains of Norway receive the rains brought from the Atlantic by the winds, and thus Sweden is drier than Norway. In winter the Gulf of Bothnia and the Baltic Sea are so frozen for several months that the Swedish ports are closed each year for long seasons.

Agriculture and Mining. One-half the Swedes and one-fourth the Norwegians live on farms. The farms are usually small, and in Norway there are few villages except those on the sea. Great numbers of cattle, sheep, and goats graze in the highlands. Butter and cheese are important products of both these countries.

In the north of Sweden there are very valuable iron mines which are extensively worked, and Swedish steel is famous the

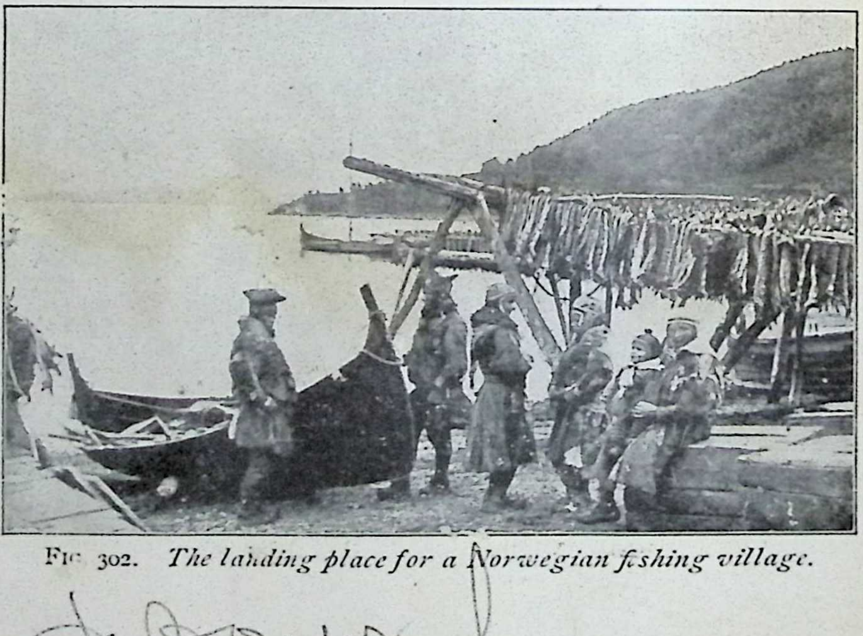

FIG. 302. *The landing place for a Norwegian fishing village.*

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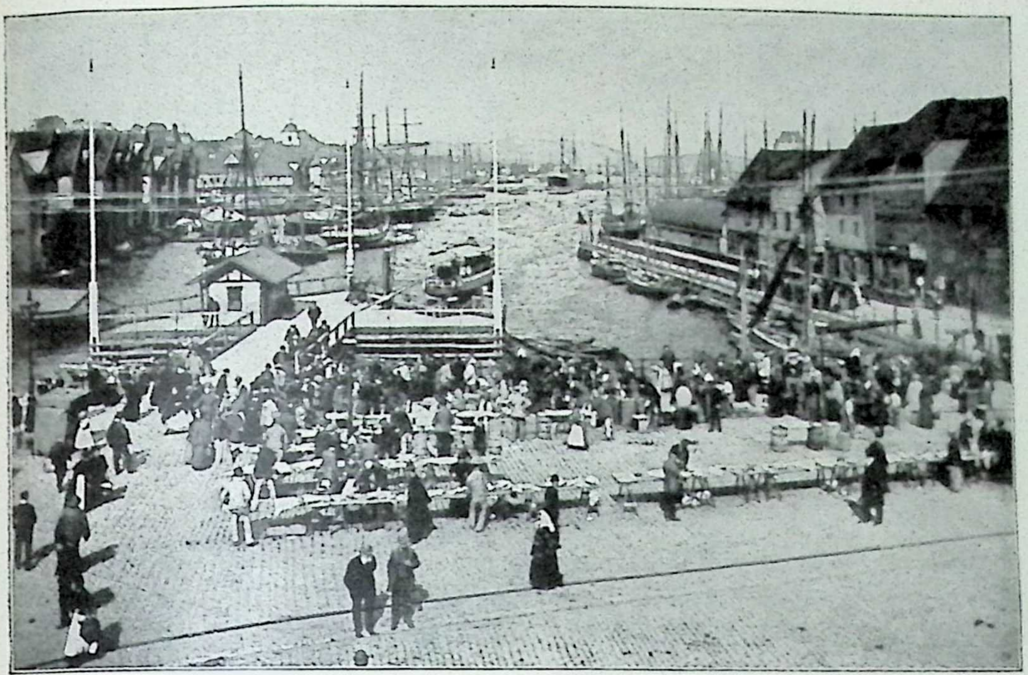

FIG. 303. *The city of Bergen, Norway. The fish market.*

world over. Manufacturing is not important, but is increasing as the people are learning to make use of the excellent water power.

Lumbering and Fishing. Lumbering is carried on extensively in the forests of the north, and lumber products make up more than one-half of the exports of Sweden.

Owing to its excellent harbors and the small amount of farm land, the people of Norway have always sought their food in the ocean, and have grown to be famous seamen.

Leading Cities. *Stockholm* and *Gothenburg* are the leading commercial cities of Sweden. Stockholm leads in imports, especially wheat and flour; Gothenburg is the most important exporting city, and sends out lumber, wood-pulp, and fish.

In Norway *Christiania* is the most important city, and has a large trade in lumber and fish. *Bergen* is, however, the leading fishing port of northwest Europe. (See Fig. 303.)

Scenery. The narrow fiords of Norway, with their beautiful wooded slopes, villages, and waterfalls, and the interesting city of Hammerfest, are visited by large numbers of tourists. (See Fig. 305.)

The northern part of Norway is so far north that in the middle of the summer it has sunlight all the twenty-four hours. Hence many tourists visit this region to see the midnight sun. (See Fig. 304.) Of course, the whole day of twenty-four hours is without sun in the middle of the winter.

Suggestions for Review

(1) Why is a port on the Baltic less important than one on the Atlantic? (2) Why do explorers in the Arctic usually start from some Norwegian port? (3) Why is the northern end of Norway called the North Cape? (4) How does the severity of the winter affect commerce and travel? (5) Find out something about the Norwegian explorer, Nansen.

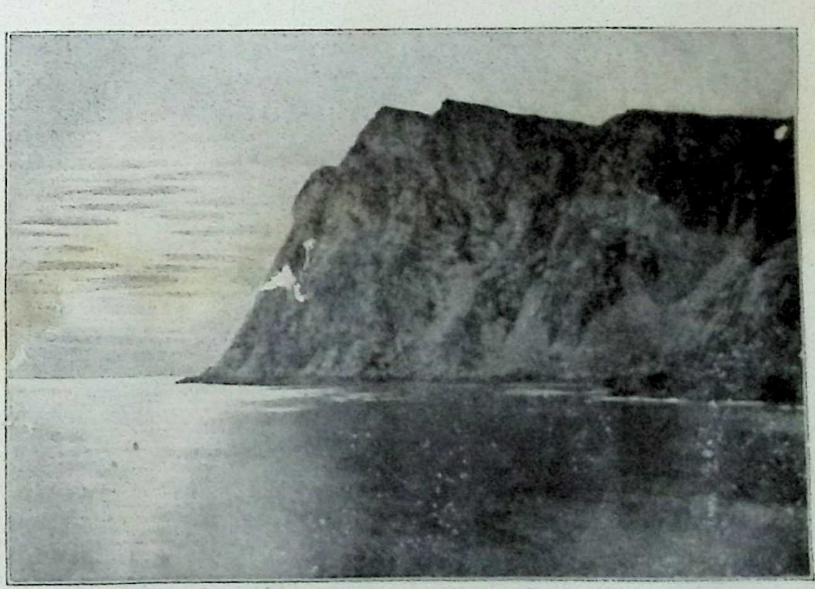

FIG. 304. *North Cape, Norway. The land of the midnight sun.*

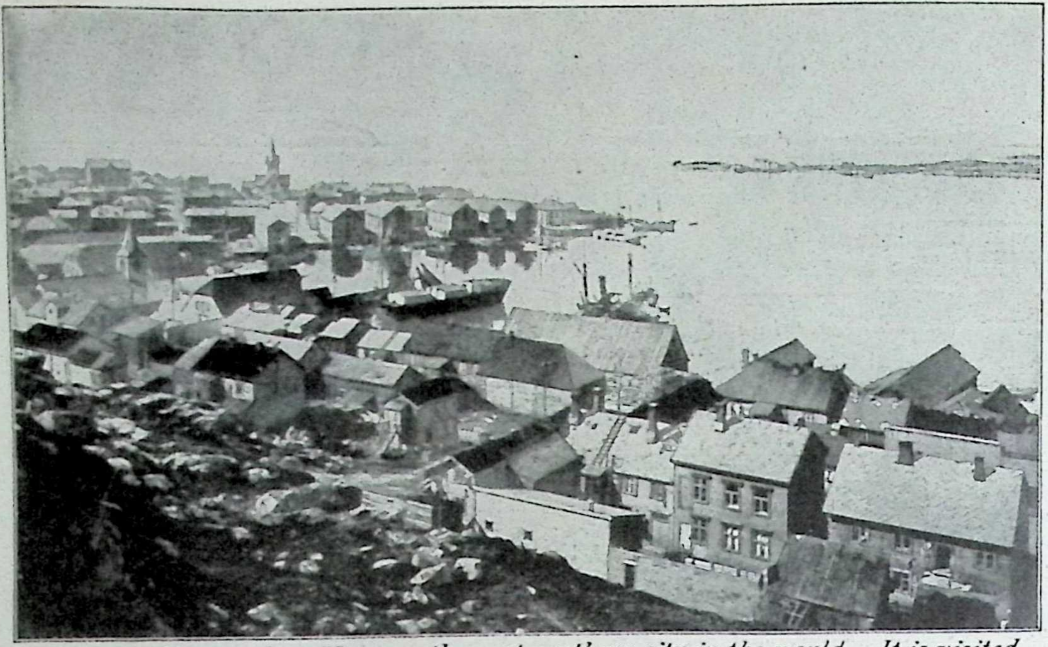

FIG. 305. *Hammerfest, Norway, the most northern city in the world. It is visited by many tourists in summer.*

XLIII. RUSSIA

Size and Surface. Russia is a large country occupying more than one-half of Europe. To the east, in Asia, is the still greater country of Siberia, which, with Russia, Turkistan, and Caucasia, forms the *Russian Empire*. The Russian Empire covers about *one-sixth of the land surface of the world.*

Russia has the low mountain range of the *Urals* along its eastern border. The larger part of the country, however, is a great plain rising nowhere more than a few hundred feet above the sea. The *Valdai Plateau* rises only slightly above the plain. It contains the headwaters of the great rivers *Volga*, *Dnieper*, *Don*, and *Northern Dvina*. The Volga, the greatest river in Russia, is also the *largest and longest river in Europe*.

Climate. The great plains of Russia are the coldest part of Europe in the winter and are swept by winds from any direction, as there are no mountains to form windbreaks. Russia extends from the shores of the Arctic Ocean halfway to the equator, and thus has many kinds of climate. The northern shore lies in the *tundra* region, and the southeastern portion is a dry *steppe* that is green for only a short time in the spring.

In northwestern Russia, in Finland, and about St. Petersburg thousands of lakes are found, reminding us of Minnesota and Maine.

Owing to the climate and the soil, the northern portion of Russia is covered with extensive forests. The southern portion is devoted to agriculture. The most important agricultural region is the country about Moscow.

Agricultural. As lumbering, mining, and agriculture are the most important occupations, only a very small portion of the people live in towns. The farms do not yield very large crops, as the peasants do not know how to carry on farming in the best way, or with modern tools. Yet Russia raises and exports more wheat than any other country except the United States, and more flax and hemp than any country in the world. It also produces more barley than any other

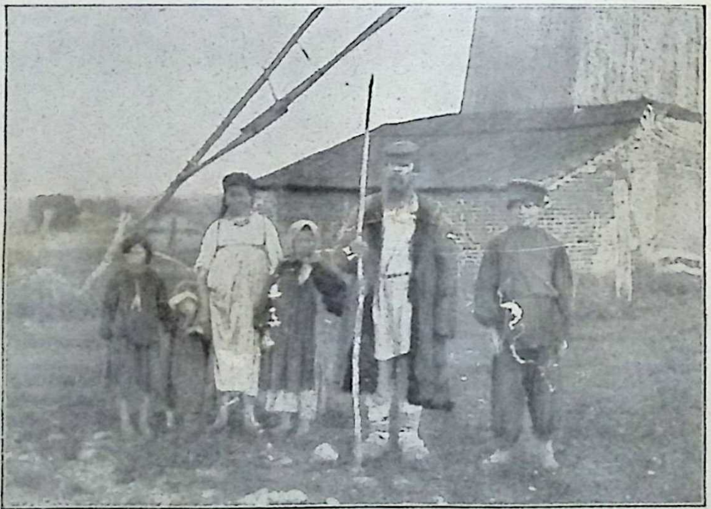

FIG. 306. *A Russian peasant, his family, and their home. These rugged people are typical of those who have settled in and developed Siberia.*

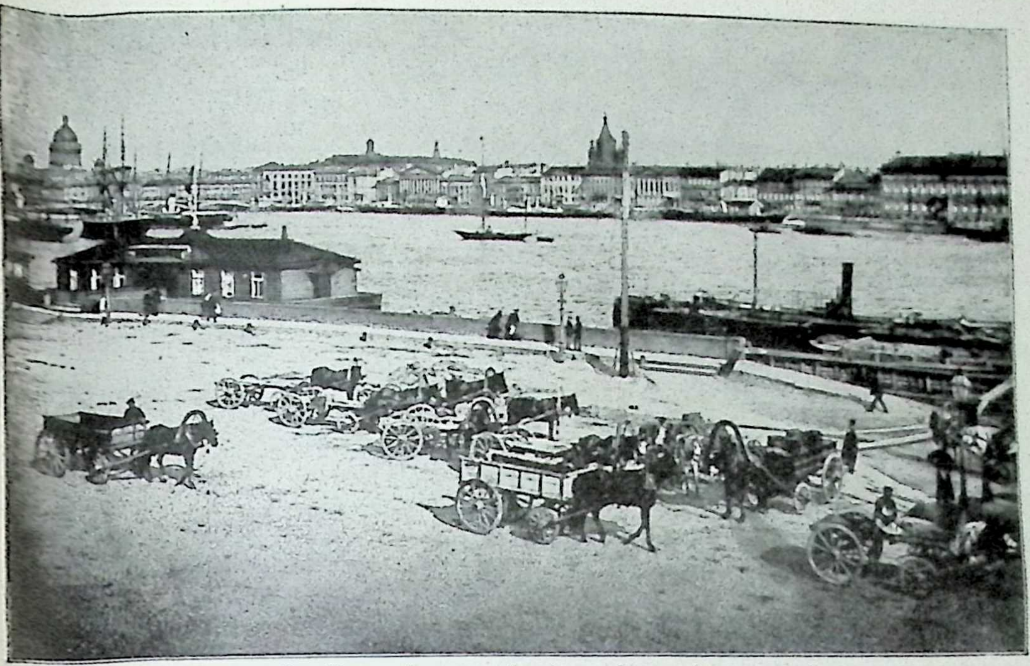

FIG. 307. *St. Petersburg. A view along the water front.*

country in Europe, one-half as many oats, and one-half as much rye as all the rest of Europe put together. Potatoes are also grown in great quantities.

Minerals. Russia is a very important mineral region. Coal is mined extensively in southern Russia and in Poland, and iron is an important product along the Urals and in Finland. Russia also produces the largest part of the platinum of the world, and the Caspian petroleum field has made it one of the most important oil-producing countries in the world.

Manufacturing. Manufacturing is increasing in importance, and now Russia manufactures a large part of all the goods needed in the country.

St. Petersburg, the largest city and the capital of the empire (see Fig. 307), and *Moscow*, the second city of Russia, are the chief industrial cities. Textiles are produced from wool raised on the plains and from cotton.

Shipbuilding is the chief industry of *Sebastopol* and *Odessa*.

Commerce. The long, navigable rivers and the many connecting canals in Russia have made water commerce so easy that railroads have developed slowly. *Warsaw* and *Moscow* are the chief railroad centers.

Water commerce is carried on either by way of the Baltic, the Black, or the White seas. In the first two cases Russian vessels cannot reach the Atlantic without passing through waters belonging to another country. This is a hindrance to commerce. Another difficulty is that nearly all the ports are frozen up for a period in the winter. The Russians are now using, however, especially built steam vessels to break channels through the ice. *St. Petersburg* and *Riga* are the more important Baltic

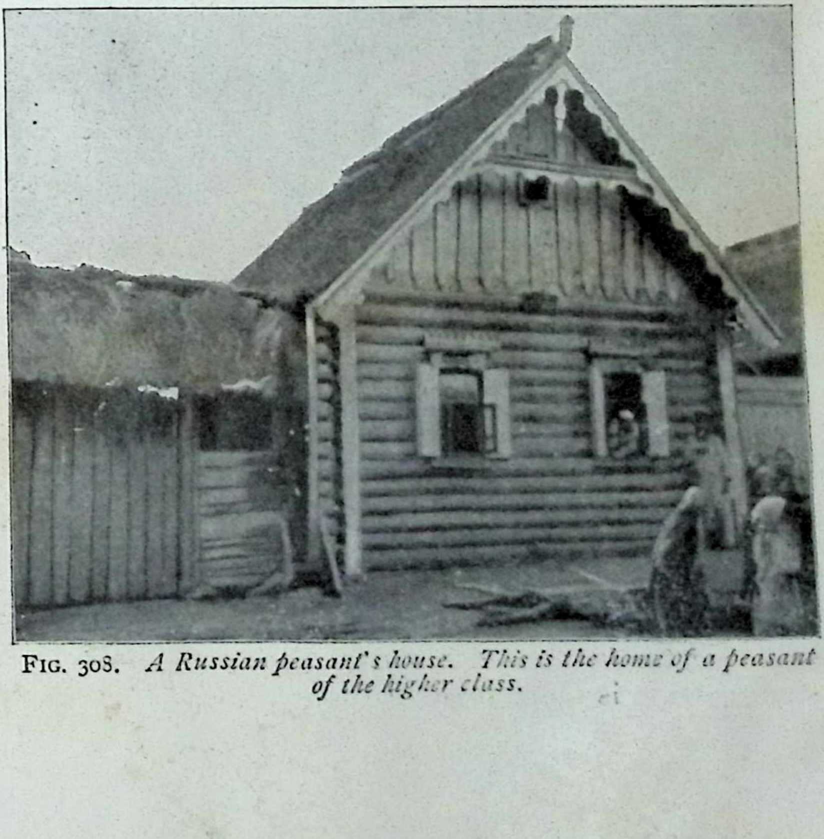

FIG. 308. *A Russian peasant's house. This is the home of a peasant of the higher class.*

ports, and *Odessa* and *Sebastopol* are the chief ports on the Black Sea.

People and Government. Although Russia is a large country and forms the more important part of the vast Russian Empire, it is little visited by tourists or traders from abroad. The people of Russia, unlike the people of most other countries, have but little voice in the government. Hence they have little chance to secure what they desire.

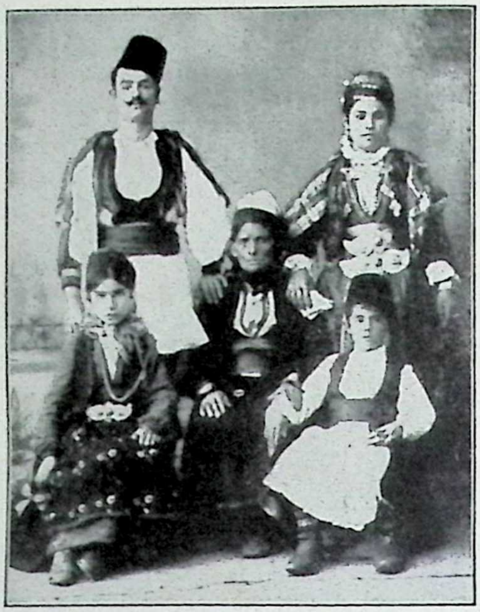
FIG. 309. *Natives of Wallachia, a province of Roumania—showing the native style of dress.*

The Czar is the head of the government and has great power. Formerly his word was absolute law but now he takes advice from his officers and grants the people more rights than they once had. The conditions throughout the country are rapidly improving. The great mass of the people (see Fig. 306) are, however, very poor and, unlike most of the Europeans, are very ignorant, and hence the country cannot progress rapidly. St. Petersburg (see Fig. 307), the capital, contains the home of the Czar.

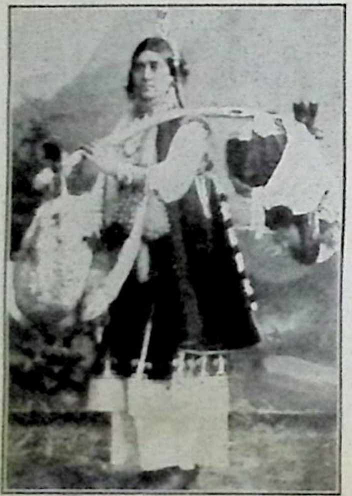
FIG. 310. *A Bulgarian woman on her way to the weekly bazaar or market.*

Suggestions for Review.

(1) What part of North America is most like Russia? (2) How do the people dress in winter in northern Russia? (3) Find out some interesting fact about Lapland. (4) Why is it important for a country like Russia to have a port on the Atlantic or Pacific?

XLIV ROUMANIA AND THE BALKAN PENINSULA

What the Region Includes. Roumania may be studied together with the Balkan Peninsula, which includes *Servia*, *Bulgaria*, *Montenegro*, *Turkey*, and *Greece*. The region is mountainous and is not densely populated. There is some lowland in the eastern parts. The chief occupation is agriculture, and even that is not as profitable as it might be if the people (see Figs. 309, 310, 311, and 312) had modern machinery and knew how to make the ground raise larger and better crops.

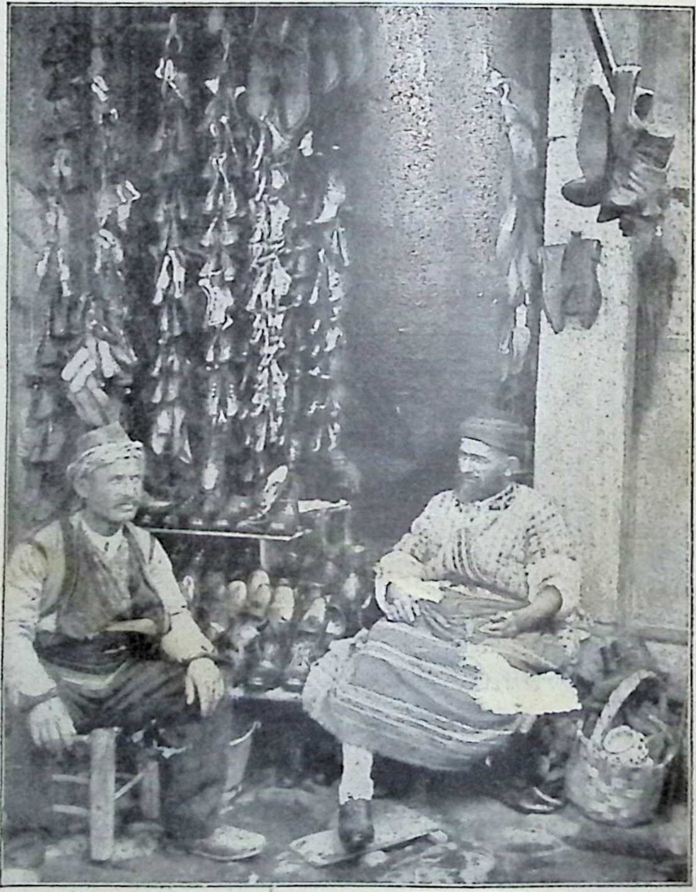
FIG. 311. *Looking into a Turkish shoemaker's shop. The merchants sit on the sidewalk.*

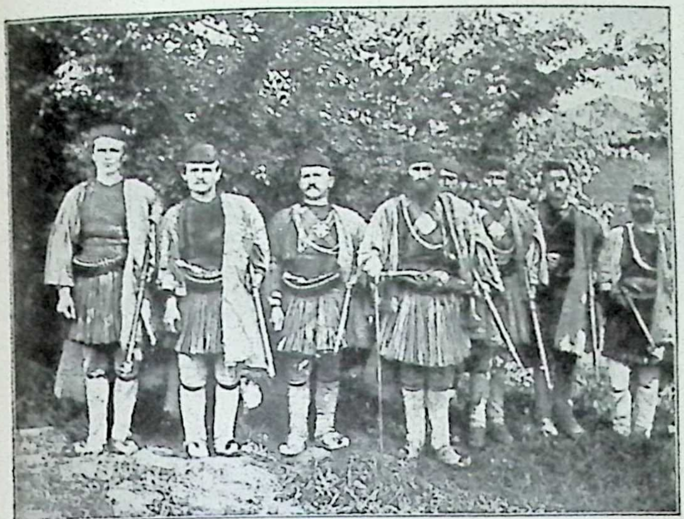

FIG. 312. *A group of Bulgarian mountain soldiers in the picturesque uniform of the state.*

Roumania. Roumania is an important maize and wheat-producing country and is one of the great granaries of Europe. Rock salt and petroleum are the only valuable minerals, and there is practically no manufacturing of any kind.

Bukarest is the most important trade center, as it is connected by rail with the Black Sea and with Budapest.

Servia. The chief products of Servia are sheep, cattle, swine, and goats, which feed on the nuts in the forests. Maize, wheat, and plums are produced in large quantities.

Bel[illegible] is the largest city, and is the center of trade in animal products, and also in carpets, cotton, and silk, which are woven in and sent from many of the small towns lying about the city.

Bulgaria. Bulgaria is largely mountainous, and agriculture, which is the only occupation of any importance, is carried on chiefly in the south. Wheat is the principal product. In one valley, however, roses are grown, and from them the perfume, *attar of roses*, is extracted. Sheep, goats, and cattle are raised in great numbers.

Sofia is the largest city and trade center.

Montenegro. Montenegro is a small and unimportant mountainous country where river fishing, stock raising, and agriculture are the only occupations.

Turkey. Turkey is not a large country, but, like Russia, it controls an extensive region in Asia. It also has dependencies in Africa. (See Fig. 330.) It is a very backward

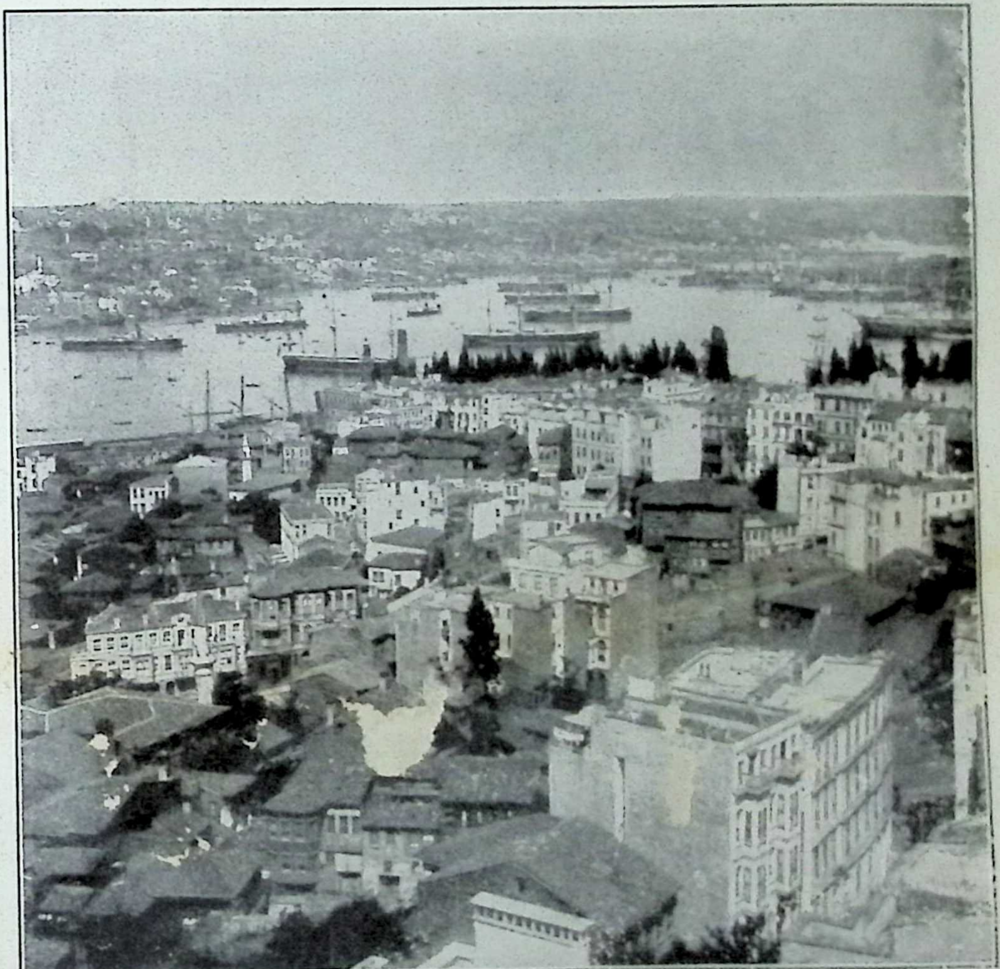

FIG. 313. *A view of the Golden Horn, the beautiful harbor of Constantinople, which is the principal city of the Balkan Peninsula.*

country because it has a poor government and because Christians are persecuted so that they do not go there and develop the region. The Turks are Mohammedans (see Fig. 314), and Turkey is the only country in Europe which is not a Christian country.

The chief products are cereals, fruits, silk, tobacco, cotton, and drugs. *Constantinople*, the largest city, is the home of the *Sultan*, or ruler. It is situated on a beautiful harbor known as the *Golden Horn*, and controls the entrance to the Black Sea. (See Fig. 313.)

Greece. Greece is a mountainous country with a coast line that abounds in good harbors. Hence the people follow a seafaring life. The country is dry in summer, and agriculture, for the most part, is carried on with difficulty. There are no good roads and few railroads, and hence interior trade is small in amount. The people are now, as a whole, poor and not very progressive.

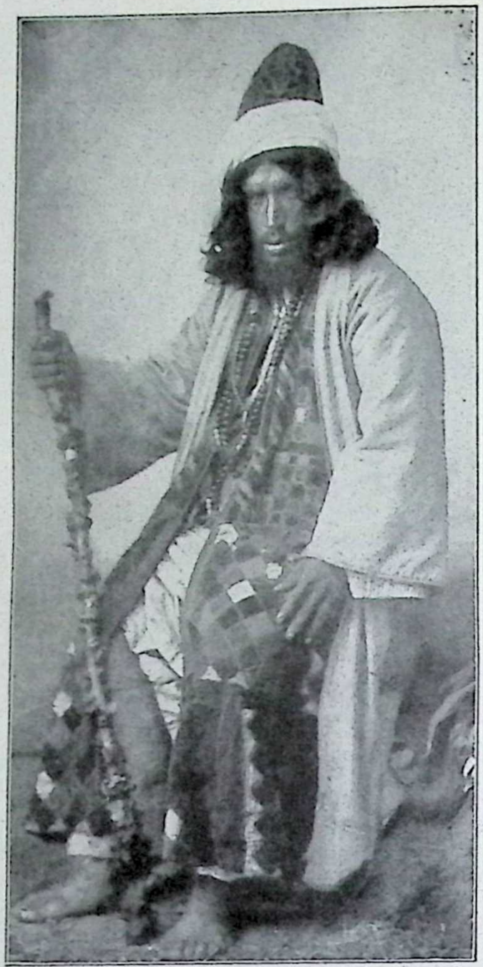

FIG. 314. *A Dervish, one of the monks of the Mohammedans.*

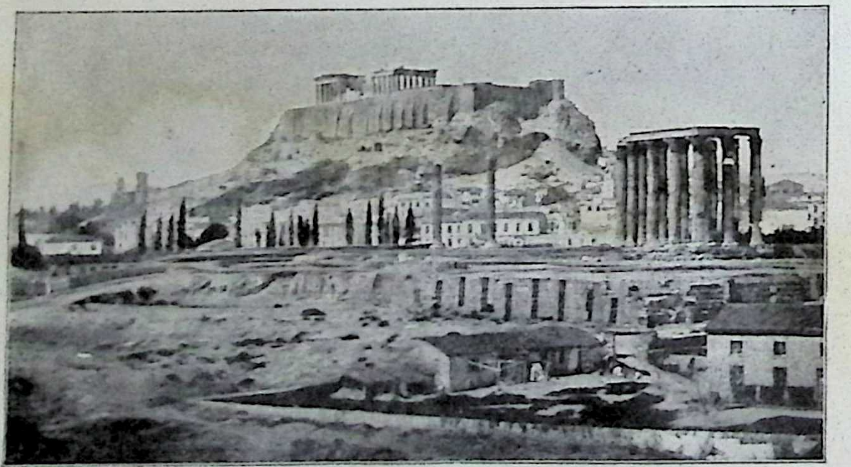

FIG. 315. *A distant view of the Acropolis at Athens, with the ruins of the Temple of Jupiter in the foreground.*

In ancient times Greece was one of the leading countries of the world, especially in art and learning. The country contains many ruins of ancient cities and temples (see Fig. 315), which are much visited and studied by scholars from all parts of the world.

Cereals, currants, olives, grapes, oranges, and lemons are the principal products and exports, and *Athens* is the largest city.

Suggestions for Review

(1) Find out some interesting fact about Turkey. (2) What pictures of Greece have you ever seen? (3) What other European country has a coast much like that of Greece? (4) How would you expect the Greeks to transport their products?

XLV. ICELAND

Iceland is a large island northwest of the mainland of Europe that belongs to Denmark. It is high except along the coast, and has in general a cold, wet climate. The surface is exceedingly mountainous and there are many volcanoes and glaciers.

The southern coast will produce hay. Sheep raising is the chief industry, and sheep and fish products form the principal exports.

Reikjavik is the only town of importance.

Suggestions for Review

(1) What other island have we studied that is like Iceland? (2) Which one is the best to live in? (3) Why are there few important towns on these islands?

bareheaded boys

AFRICA

XLVI. AFRICA IN GENERAL

The Dark Continent. Africa is the *second largest continent* of the world, and is connected with Asia, the largest continent, by a narrow neck of land known as the *Isthmus of Suez*. At Gibraltar it is separated from the continent of Europe by a strait only about eight miles wide.

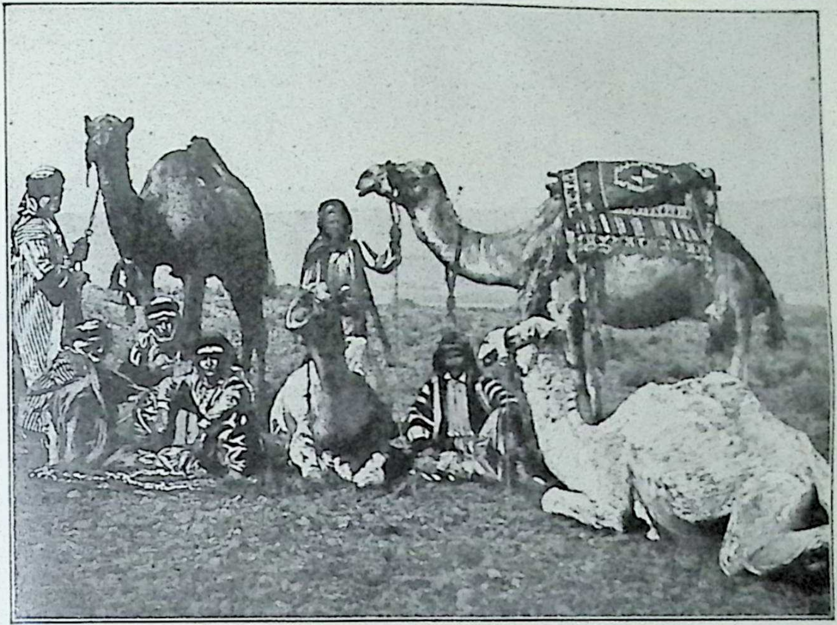

FIG. 316. *Transportation across the desert. Long caravans or trains of camels carry merchandise over this desert region.*

Although Africa has been known to the people of Europe since long before the Western Hemisphere was discovered, we still know less about it than about any other continent. Hence it is often called the *Dark Continent*. Some of the reasons for this we shall find out as we learn more about the surface, the climate, and the people of this great body of land.

Climate and Surface. Africa is unlike all the other continents in many ways. In the first place it lies wholly in the Hot Belt, with the exception of a small area near the Strait of Gibraltar and a somewhat larger region in the extreme southern portion, which lie in the Temperate Belts. The continent is also broadest in the hottest part of the Hot Belt, and hence the largest part of it has a hot, moist climate which is not favorable for white people.

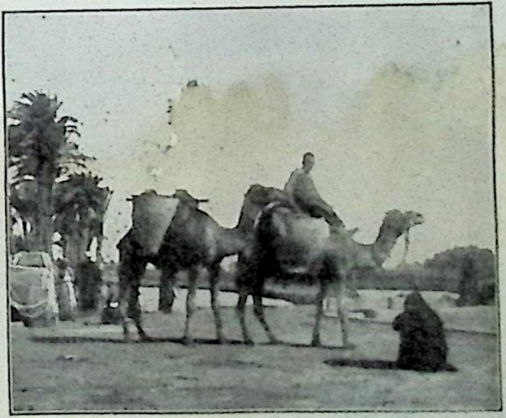

FIG. 317. *The camel. The most useful beast in northern Africa because of its ability to go long distances without drinking.*

Africa has few mountain ranges such as we have found in all the other continents. The chief highlands are those of Abyssinia, the Atlas Mountains in the north, and the Kwathlamba in the extreme south. The larger part of Africa is formed of a series of high plateaus, above which rise a few high mountains. The highest are the peaks of *Kilima-njaro* and *Kenia*, both higher than any mountains in the United States, not including Alaska. The larger part of the coast is bordered by a low, narrow plain, which widens somewhat west and northeast of the desert, *Sahara*. (See Fig. 325.)

Drainage. Owing to the position of the highlands, which form divides for the principal rivers, Africa has several long streams. The *Nile*, next to the Missouri-Mississippi, is the *longest river in the world*, and drains a larger area than any other river except the Amazon in South America. The *Congo*, the second longest river of Africa, is also one of the great rivers of the world. The other large rivers are the *Niger* and the *Zambezi*. Nearly

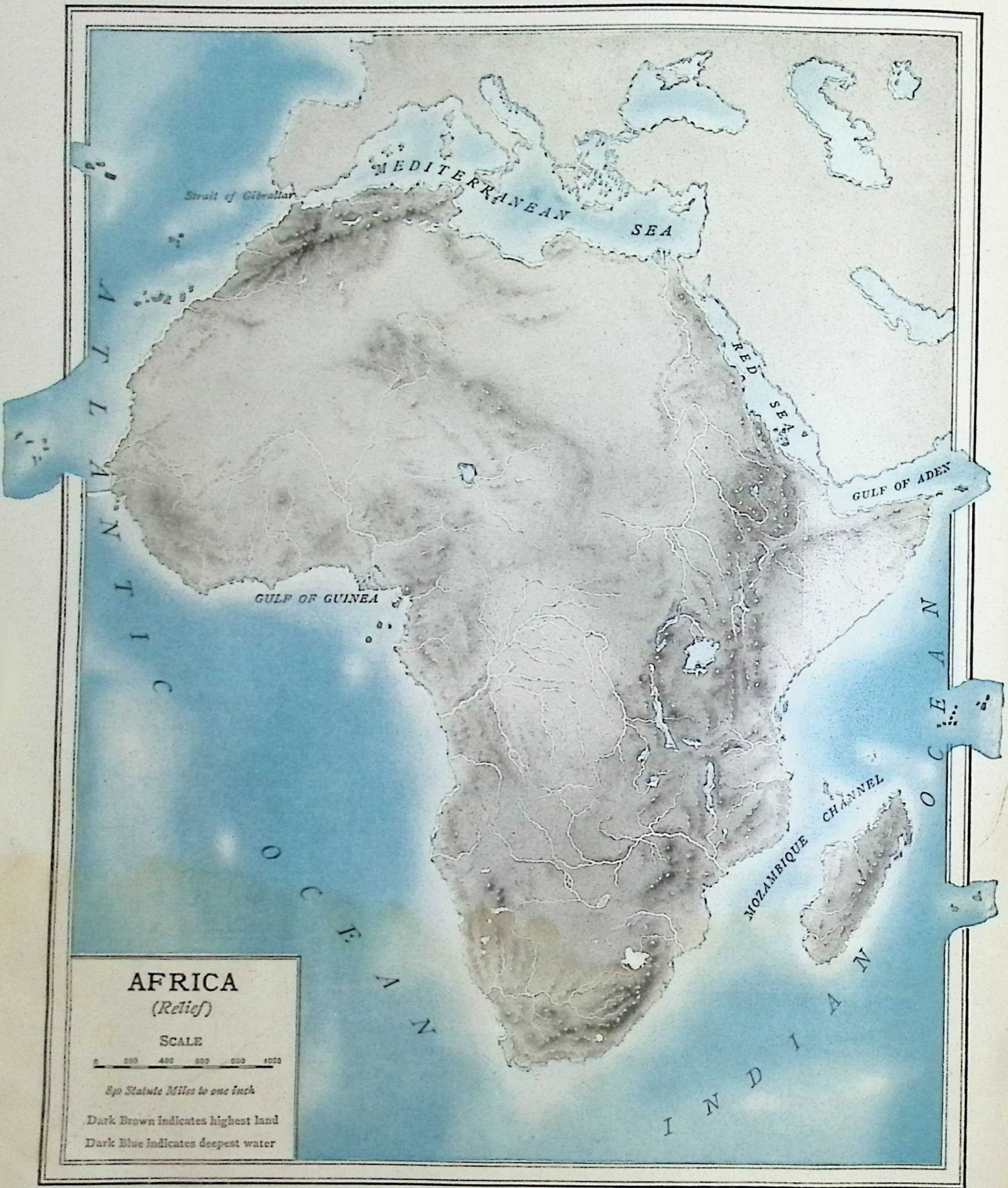

FIG. 318.

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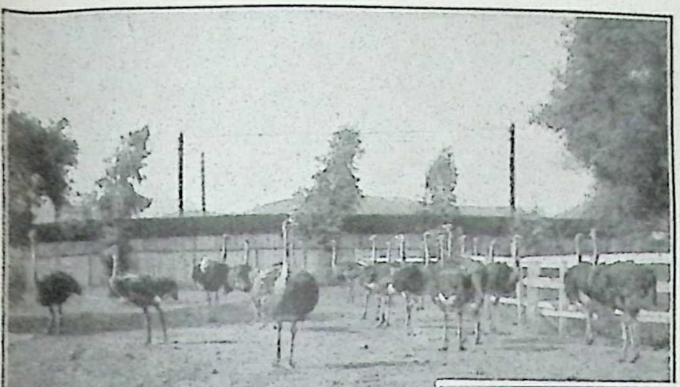

FIG. 319. *An ostrich farm. These birds are raised for their feathers, oil, and eggs.*

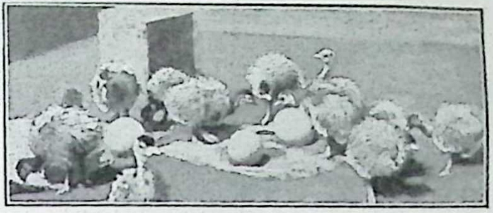

FIG. 320. *Young ostriches recently hatched. These little birds will grow to a height of about eight feet.*

all the rivers are interrupted by falls or rapids near the coast, so that they could not be readily followed by explorers. Now railroads are being built around some of the falls, and thus commerce with the interior is being made possible.

Plants. Central Africa, like the similar equatorial regions of South America, has a heavy rainfall, especially in the basins of the Congo and the lower Niger. Hence these regions are covered with dense forests, such as we found in the valley of the Amazon.

North and south of the tropical rainy region with its dense forests are great areas of grass land known as *savannas,* in which trees are usually found only along the streams. In the north, extending from the Atlantic Ocean to the Red Sea, is the *Sahara,* the *greatest desert in the world.*

The desert, Sahara, is a great rolling plain interrupted by many short ranges of mountains. The only rain of any consequence falls on the mountains. The rest of the region is very dry and practically without vegetation, except about the *oases,* which form green spots in the gray and brown wastes of the desert.

An oasis is found wherever a spring enables the water that is deep in the ground to come to the surface. Such an inviting spot of green and shade is naturally a camping place for travelers. Thus the oases are the most important places in the whole desert, and small towns have in many cases grown up in them.

Animals. Nearly all the animals of Africa are unlike those of any other continent, and would be strange to us, except a few we may have seen in a circus or a zoölogical park. Among the more important animals may be mentioned the tusked elephant, which furnishes ivory; the camel, used for travel in the desert (see Figs. 316 and 317); the hippopotamus, rhinoceros, giraffe, lion, leopard, antelope, monkey, the dog-like hyena, and the man-like ape. The ostrich, the largest known bird, is also found in great numbers (see Figs. 319 and 320), and crocodiles abound in the streams.

The People. The people of Africa are all either of the black or the white race. Europeans live in the very northern and very southern parts, but the continent as a

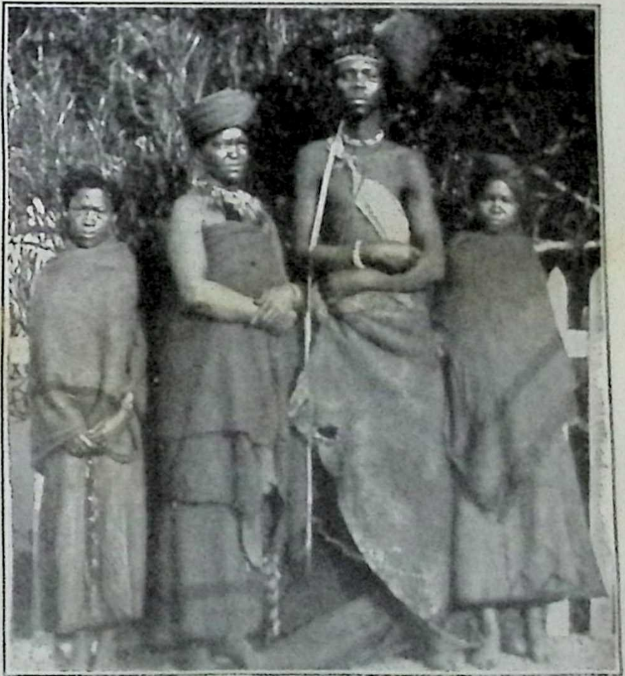

FIG. 321. *Native Zulus. The women dress in blankets and the men in hides of animals. All wear ornaments of beads, feathers, and metal bracelets.*

Office furniture

whole is occupied by the native races. (See Figs. 321, 323, and 340.) In the northern and northeastern states the people are mostly of the white race, but very different from Europeans because of their dark, oval faces and sharp features, which are best shown in the *Arabs* (see Fig. 352) of the desert.

In the center of the continent is the original home of the very black negroes. It was from this region, often called the *Sudan*, which means *land of the blacks*, and from the western coast that negroes were formerly brought into North America as slaves. In the region south of the equator almost all of the people are light-colored negroes, generally known as the *Bantu*.

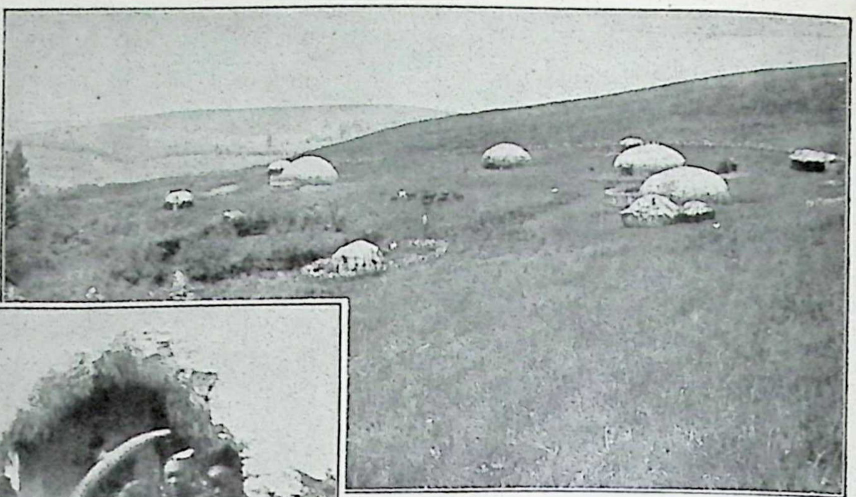
FIG. 322. *A native village, South Africa.*

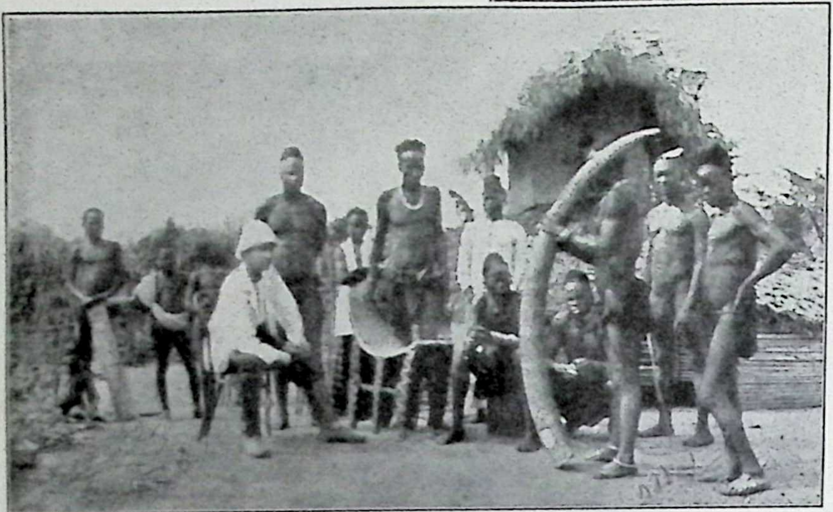
FIG. 323. *Scene at a village in Central Africa. A trader is bartering with the natives for ivory. Note the great size of the tusks.*

Suggestions for Review

(1) What two men have been most prominent as explorers of Central Africa? (2) What have you ever seen that came from Central Africa? (3) Find out for what palm oil is especially used. (4) Describe some African animal that has not been mentioned in the text. (5) Why is the Strait of Gibraltar an important waterway? (6) What other parts of the world have a climate like Central Africa? (7) In what other ways are these countries alike?

XLVII. NORTHERN AFRICA

The Countries of Northern Africa. Northern Africa may be said to include *Morocco*, *Algeria*, *Tunis*, *Tripoli*, and *Egypt*, of which the best known country is Egypt. Along the northern coast runs the high chain of the *Atlas Mountains*, which

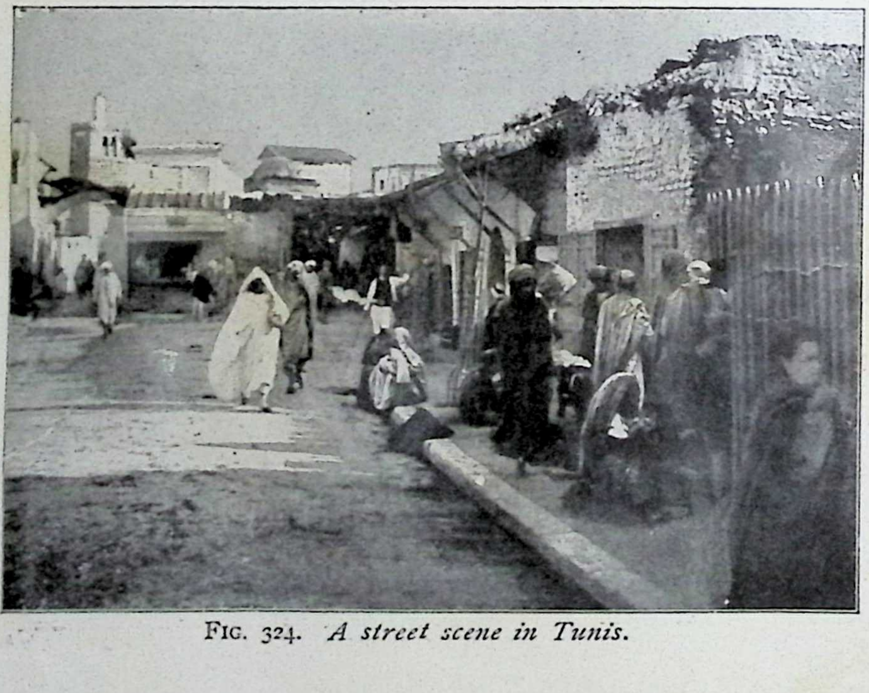
FIG. 324. *A street scene in Tunis.*

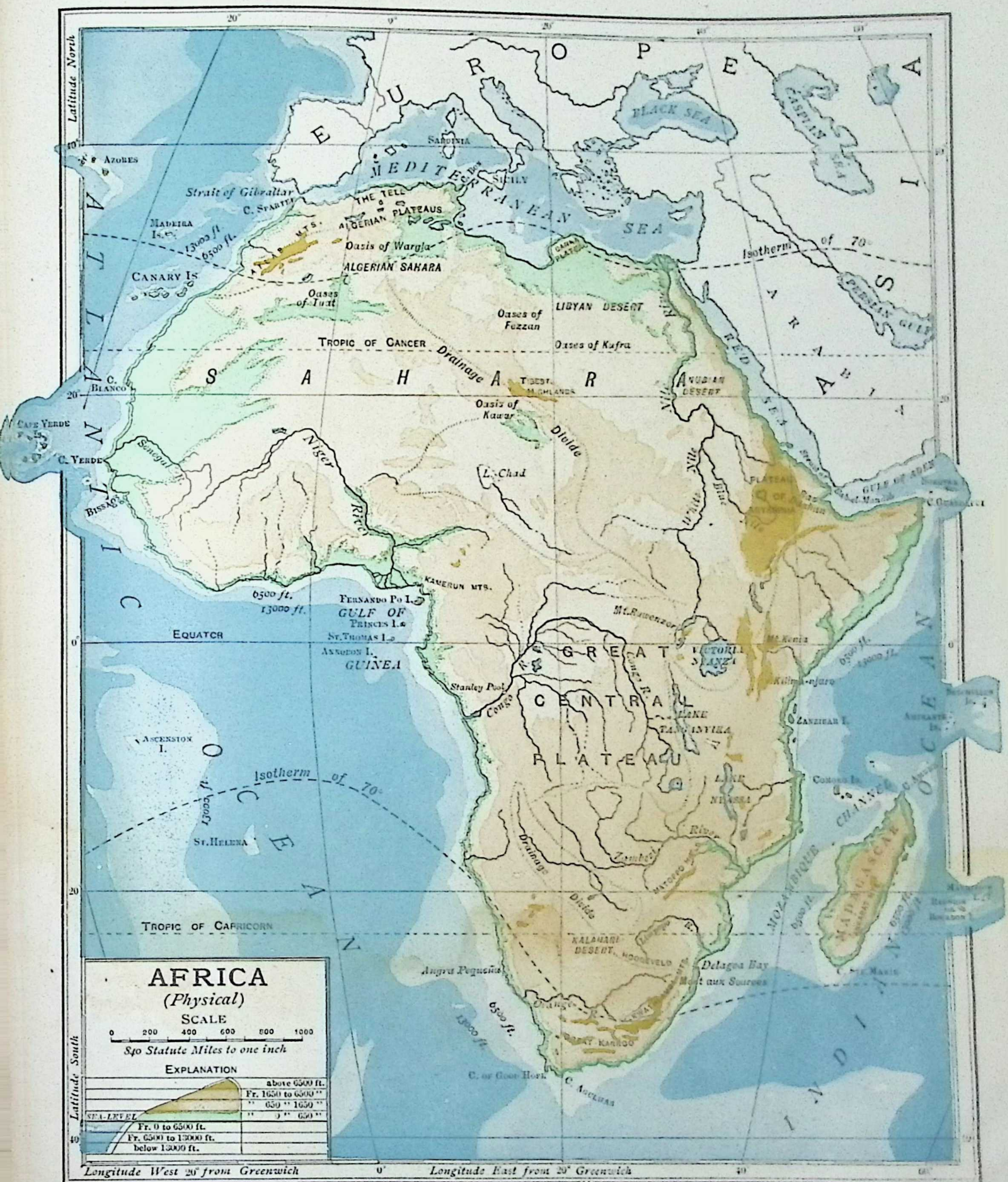

FIG. 325

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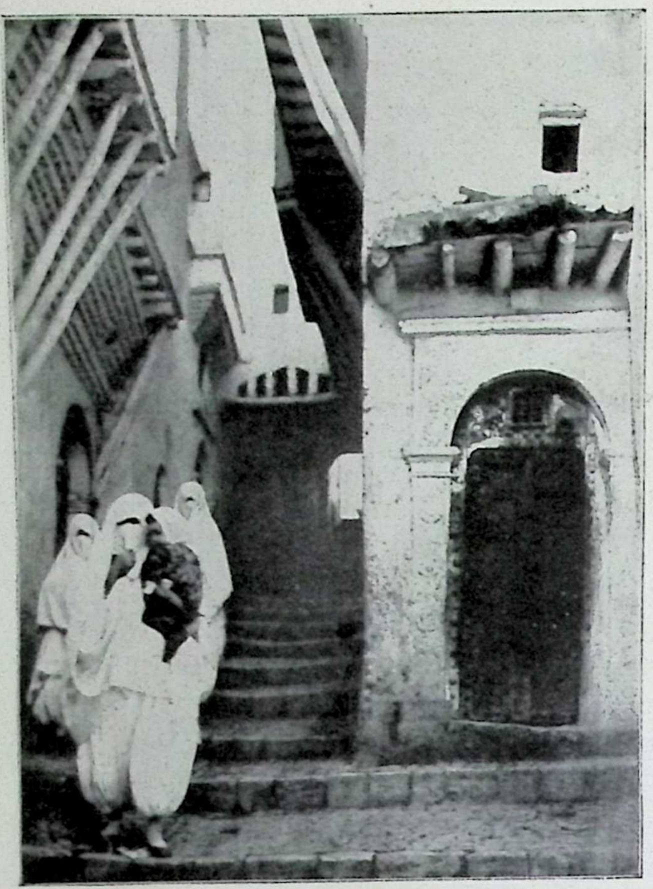


FIG. 326. *A street scene in Algiers. Almost all Mohammedan women are veiled when in public places.*

divides the northern coastal area from the interior desert regions. On account of their height and rainfall, the Atlas Mountains contain many fertile valleys. Hence this region has a well developed grazing industry.

Morocco. Morocco is an independent country, the ruler of which is known as the *Sultan*. Owing to the climate and soil, which in the northern parts are very like those of southern Europe, dates, olives, and figs are raised in great quantities. The larger part of Morocco, however, is a desert which produces little of value. As there are no railroads in the country, and as all the goods must be carried by animals, the commerce cannot be called important.

Morocco is the southern capital, and contains the home of the Sultan. He also lives at certain times at *Fez* and *Mekines*, the northern capitals. Tangier is a small town and the only port of importance.

Tunis and Algeria. Tunis and Algeria are governed by France. They are like Morocco in many ways, but are of much greater importance.

Algeria is rich in minerals, especially in iron, lead, silver, copper, and phosphate. It is also one of the most important wine-producing regions of the world, and is especially famous for its cork oaks. Another valuable product is alfa fiber, a grass which is used for making paper.

Tunis raises cereals, fruits, tobacco, alfa grass, camels, goats, cattle, horses, and sheep, and produces the best olive oil and dates known in the world.

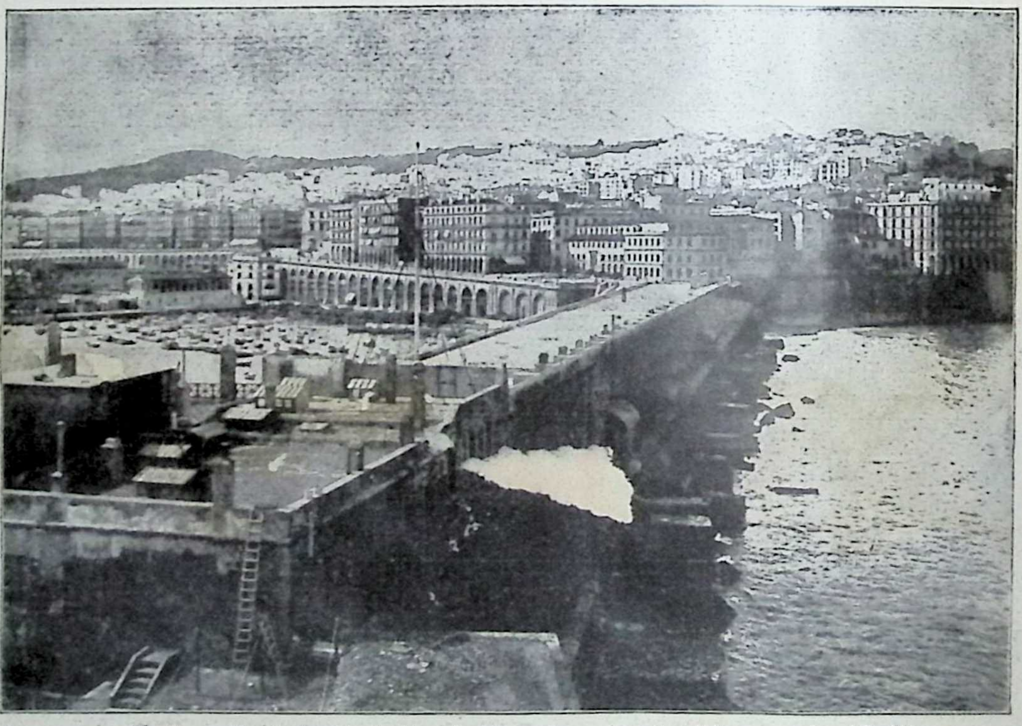


FIG. 327. *Algiers, the principal city of Algeria. Its position on the Mediterranean makes it important as a calling and coaling station.*

Tunis (see Fig. 324) is the principal city of Tunis, and *Algiers* (see Figs. 326 and 327) of Algeria. The town last named, because of its position on the Mediterranean, is important as a calling port and coaling station.

Tripoli. Tripoli, Barka, and Fezzan together make up the country of Tripoli, and are all under the control of Turkey.

The town of *Tripoli* (see Fig. 329) is the principal trade center, and exports ostrich feathers, ivory, and skins.

Egypt. Egypt, which belongs to Turkey, is a large country in the northeastern part of Africa, and lies almost entirely in the desert region. (See Fig. 330.) The most interesting feature of Egypt is the famous river Nile, which rises south of the equator and is made up of three rivers, the *Blue Nile*, the *White Nile*, and the *Atbara*. After its junction with the Atbara the Nile flows eighteen hundred miles without receiving a tributary. This fact shows the lack of rainfall and the need for irrigation (see Fig. 328) in the region crossed.

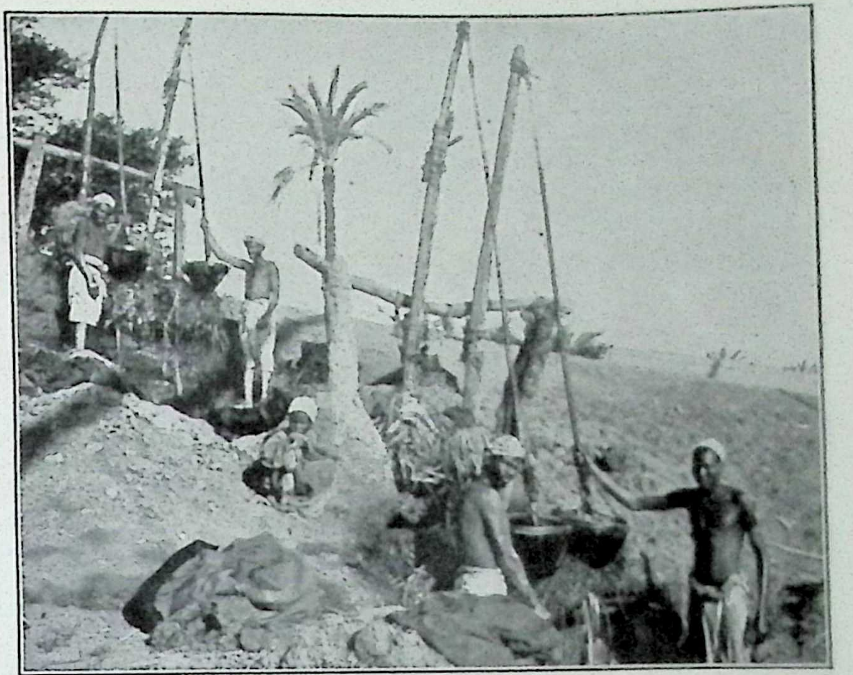


FIG. 328. *Irrigation in Egypt. The water is lifted by buckets from one terrace to the other, and is carried by channels to the fields.*

The Nile is flooded each year, reaching its highest point in October. The river not only soaks the country it floods, but deposits a quantity of fine detritus over its flood plain each year. In this way the soil of the region is continually renewed. It is due to the floods that the Nile country has always been famous for its agricultural products.

The larger number of the people of Egypt live in the

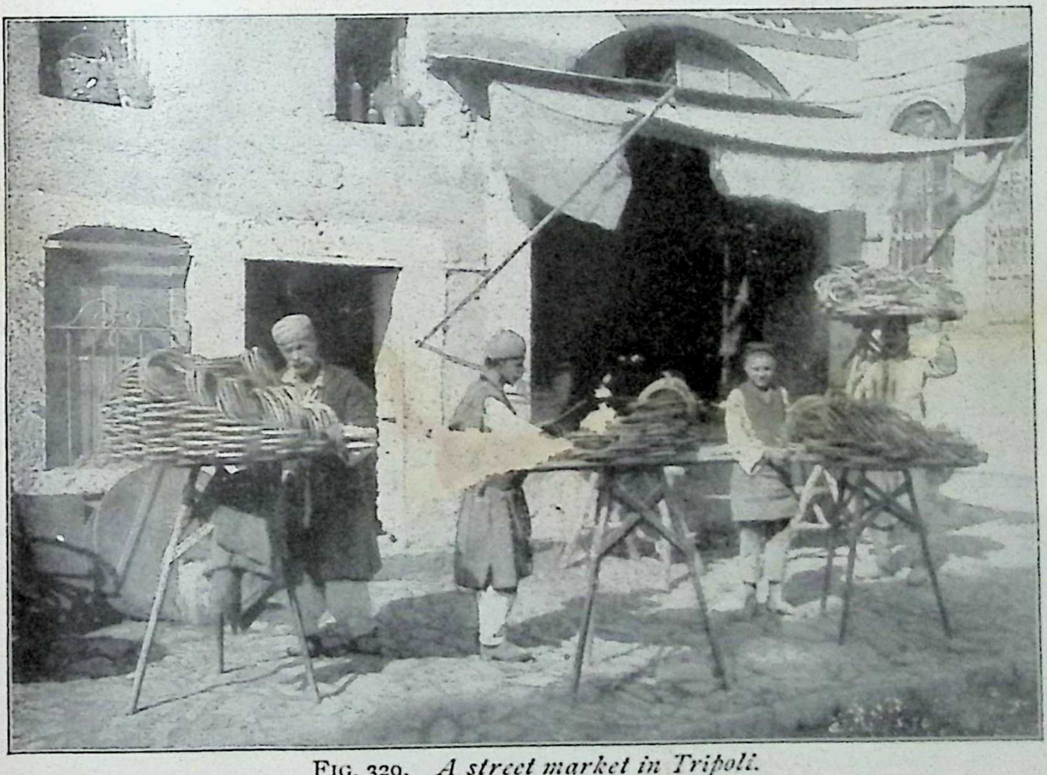
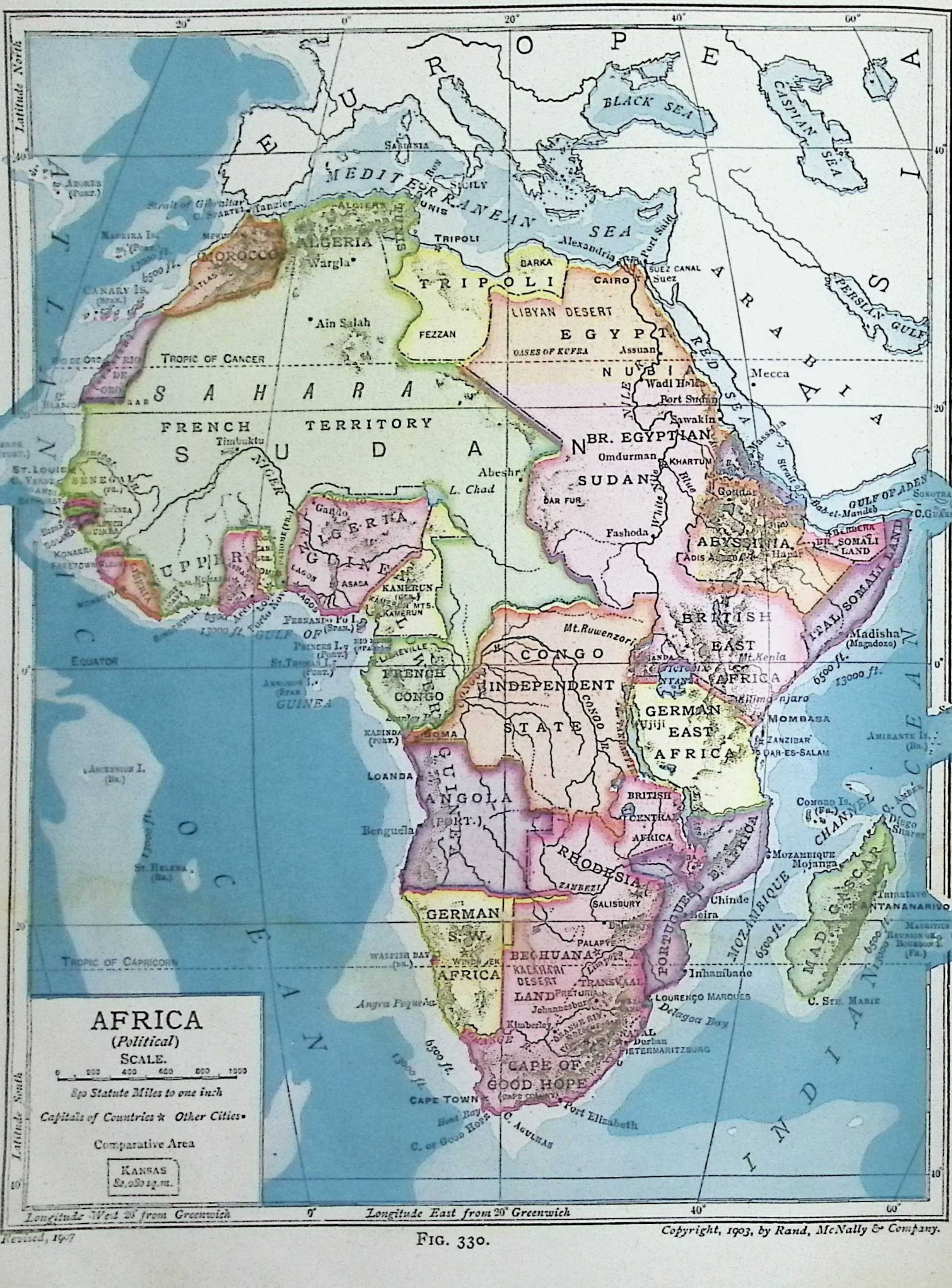


FIG. 329. *A street market in Tripoli.*



Revised, 1907

FIG. 330.

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narrow valley of the Nile where they can get a living from crops raised each year after the flood season.

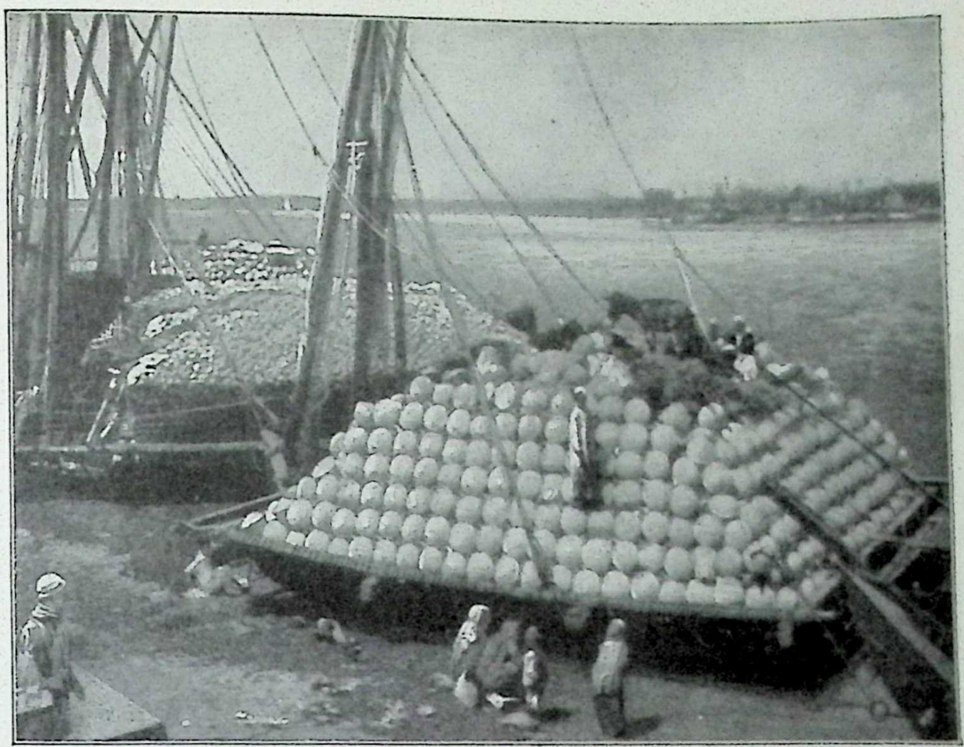

FIG. 331. *Commerce on the Nile. These boats are loaded with pottery. They are built square and of light draft, and sail very slowly.*

The Nile (see Fig. 331), except where the river is interrupted by rapids, is navigable throughout its length. Between Khartum and Assuan there are six rapids, or cataracts. Recently a great dam has been built at Assuan to hold in much of the water of the Nile, so that it can be allowed to flow down to the lower regions as it is needed. This will regulate the floods and probably make the country more valuable as an agricultural region than ever before.

The principal crops of Egypt are wheat, cotton, barley, rice, dates, sugar cane, mandarins, lemons, and other Hot Belt (see Fig. 125) fruits.

The Nile Delta; Cities. At *Cairo*, the capital of Egypt (see Fig. 332), the Nile divides into a number of streams which flow toward the Mediterranean through the plain the river has made. (See Figs. 325 and 330.) The region crossed by these streams is known as the *Delta*, because the several channels outline the Greek letter Δ, or "delta." The word delta is now used to describe all similar river mouths, and is also applied to the plain through which the divided streams flow. (See Fig. 50.)

The principal streams of the Nile Delta flow into the Mediterranean at two small cities, *Damietta* and *Rosetta*, and are known by these names.

The most important coast

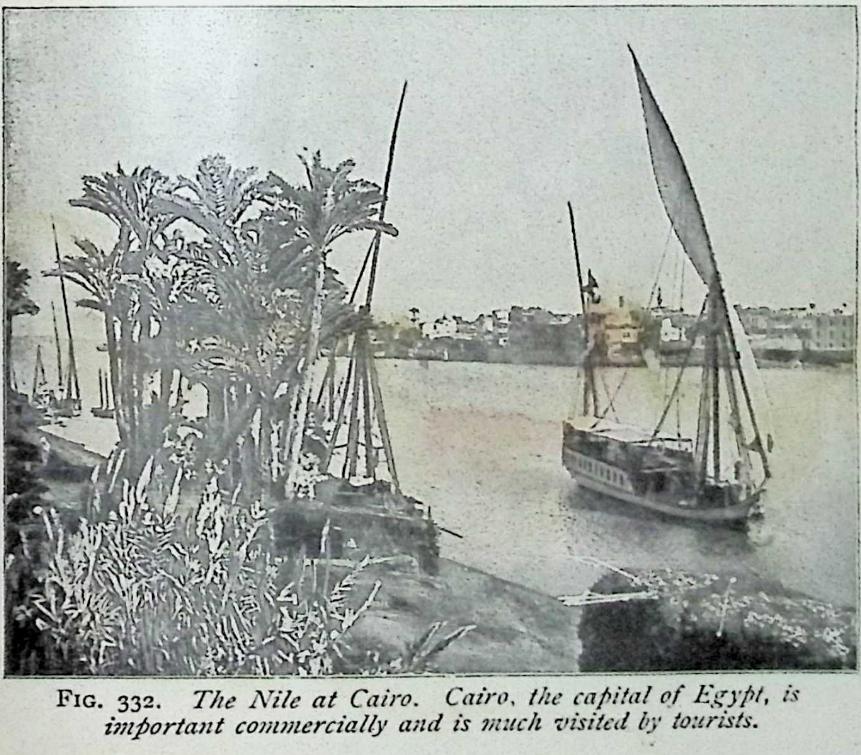

FIG. 332. *The Nile at Cairo. Cairo, the capital of Egypt, is important commercially and is much visited by tourists.*

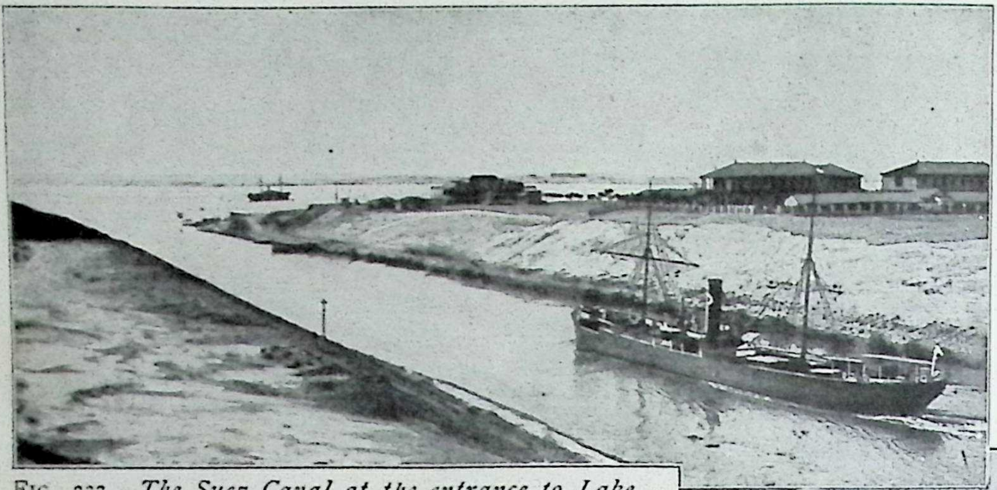

Fig. 333. *The Suez Canal at the entrance to Lake Timsah, forty-six miles from Port Said. The canal is 150 feet wide.*

Suggestions for Review

(1) Why is an oasis a pleasant spot for a traveler? (2) What American river is in some ways like the Nile? (3) Find out something about the Sphinx or the Pyramids in Egypt. (4) Are the floods on the Nile destructive?

city is *Alexandria*, which is favorably situated for commerce because of its position on the Mediterranean, close to the Nile and the Suez Canal. (See Fig. 334.)

The Suez Canal. The Suez Canal (see Fig. 333) has been built across the Isthmus of Suez so as to shorten the water route from Europe to India, Australia, and China. The canal is eighty-seven miles long. At its ends the two cities of *Port Said* (see Fig. 335) and *Suez* have grown up, because all vessels naturally have to stop as they approach the canal. Ten vessels a day, on the average, pass through this important canal.

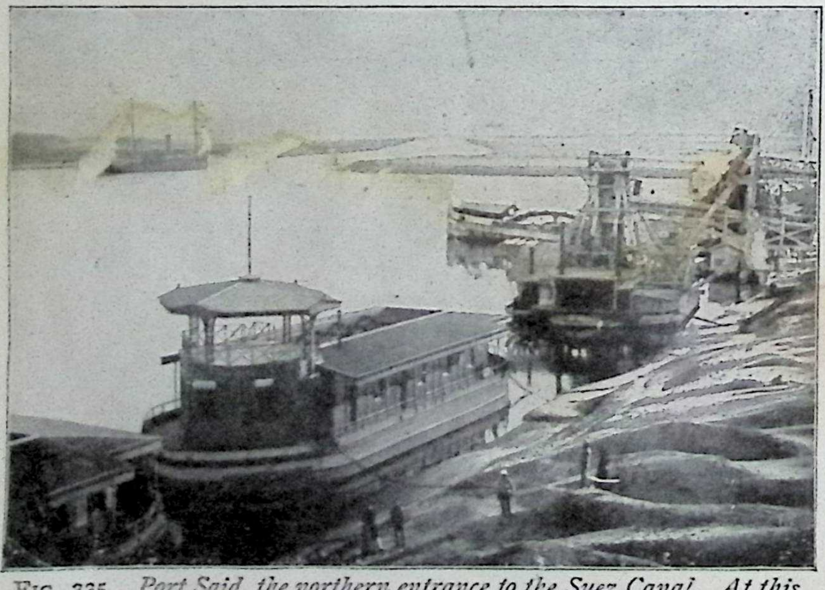

Fig. 335. *Port Said, the northern entrance to the Suez Canal. At this port all vessels passing through the canal pay toll.*

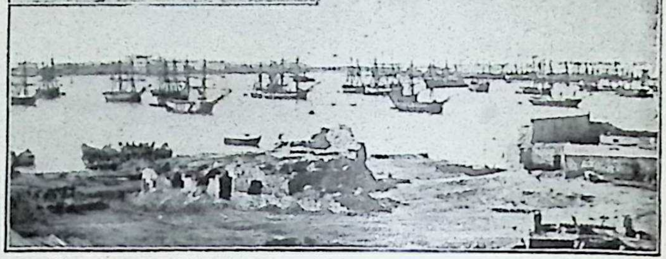

Fig. 334. *The bay at Alexandria. This harbor is always filled with the ships of all nations, it being a calling port for all the Egyptian and the Suez Canal traffic.*

XLVIII. CENTRAL AFRICA

Countries. Central Africa, as a whole, lies in the hottest part of the Hot Belt, and is occupied principally by native tribes of negroes. (See Fig. 336.) Large parts of the area belong to the United Kingdom, France, Germany, Italy, Spain, and Portugal. (See Fig. 330.)

The great region lying to the south of the Sahara is called the *Sudan*. Most of it belongs to France. The people, who are largely savage tribes of blacks, carry on very little agriculture, and live mostly on the wild products of the forests. It is almost needless to say that there is no manufacturing of any importance.

Products; Cities. The products and exports of the eastern section are ivory, rubber, hides, cloves, and gums; those of the western region are palm oil, rubber, valuable woods, gold, monkey skins, ivory, and coffee.

The richness of the country is little known, owing to the difficulties of exploring the interior, and to the climate, which is not favorable for Europeans. Lagos and Loanda are the chief ports.

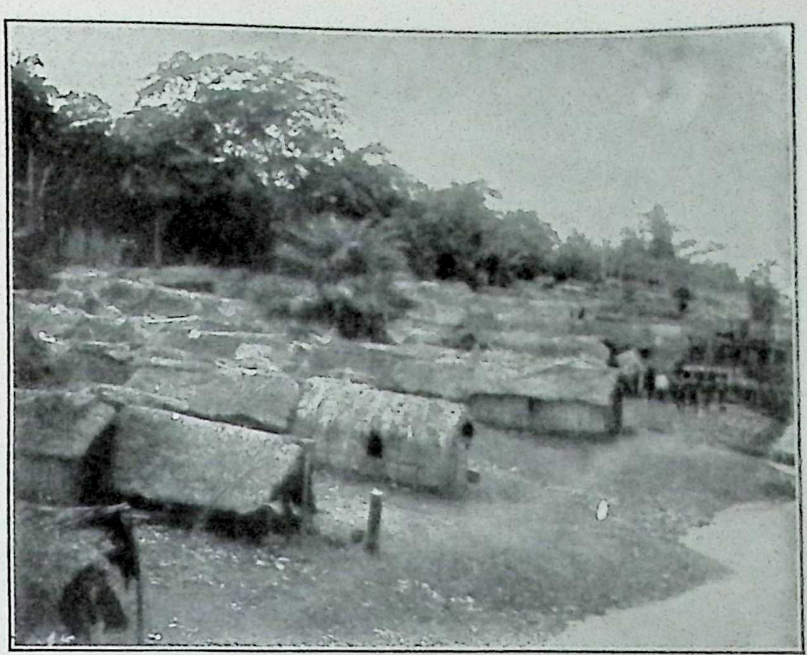

FIG. 336. *A native village in Central Africa. The huts are made of poles, covered with dried grass, leaves, and bark.*

XLIX. SOUTH AFRICA

Characteristics of South Africa. With the exception of Portuguese East Africa, Angola, and German Southwest Africa, the whole southern part of the continent belongs to the United Kingdom.

A large part of southern Africa is a high, mountainous plateau which receives little rainfall. The greatest rainfall and the pleasantest climate are found along the southern and southeastern coasts, and hence it is in this part of the country that we find agriculture (see Fig. 338) and manufacturing important. In the rest of the area grazing is the leading occupation, except in *The Transvaal* and *Orange River colonies*, where mining is very extensive and profitable.

Products; Cities. In the *Cape of Good Hope*, commonly known as the *Cape Colony*, wheat, oats, barley, all kinds of fruit, wool, goat hair, and ostrich feathers form the chief products and exports. The colony also has extensive flour mills, breweries, and tanneries, and can carry on interior commerce readily, as it has several thousand miles of railroad.

In *Natal* the chief agricultural and mineral products are sugar, maize, tea, tobacco, coal, and gold.

In *Rhodesia* rice, wheat, coffee, and rubber are produced. Rice and coffee are the principal exports of British Central Africa.

The *Orange River Colony* and *The Transvaal* are famous for their gold and diamond mines. The diamond mines here are the greatest in the world.

Kimberley is the chief city of the diamond region. Gold is extensively mined about *Johannesburg*. (See Fig. 337.) The two colonies last named also export wool, hides, goat hair, and other

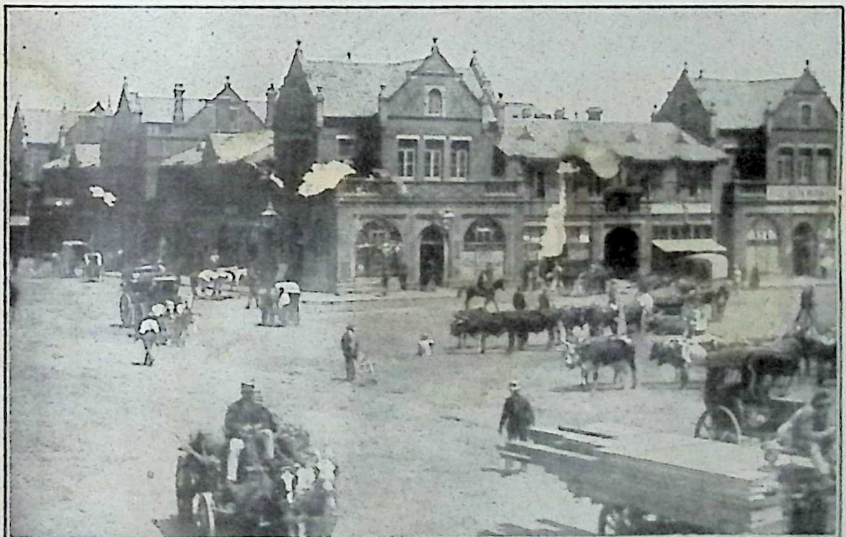

FIG. 337. *The market place, Johannesburg. The wagon drawn by eight steers is a typical mode of travel in this hilly country.*

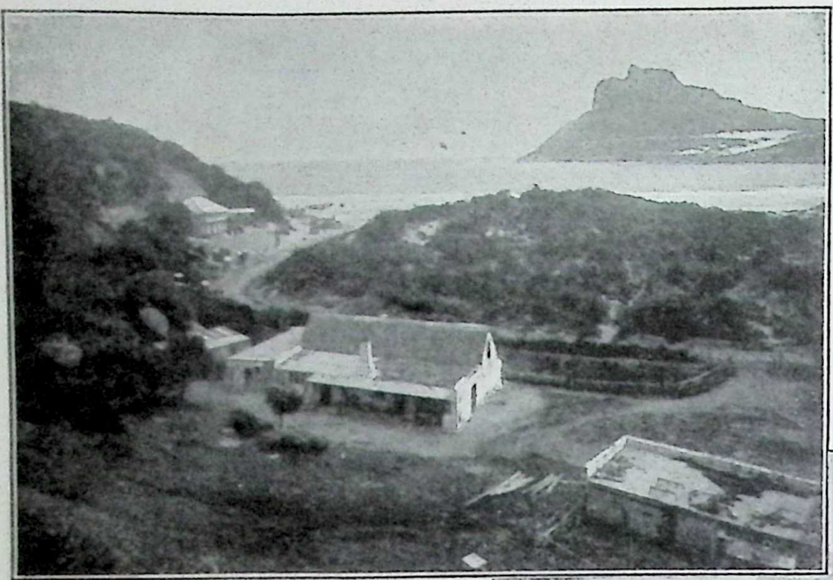

FIG. 338. *Hout Bay, South Africa. The farmhouse and buildings are typical of this region.*

grazing products. German Southwest Africa is mostly a great desert region in which grazing is the leading occupation.

The principal cities are along the coast or near the mining regions. These interior cities are connected with the leading seaports by railways. *Lourenço Marques*, on Delagoa Bay, is connected with *Pretoria*, the capital of The Transvaal, as are also *Durban* and *Port Elizabeth*, important ports of the extreme south. The chief port of South Africa is *Cape Town*, situated at the foot of Table Mountain. (See Fig. 339.)

L. MADAGASCAR

Madagascar. About two hundred and fifty miles southeast of Africa lies the island of Madagascar. It is a French colony nearly twice the size of the British Isles, and has a Hot Belt climate. Hence its products are much like those found elsewhere in similar climates. Gold, rubber, cattle, and raffia are the leading exports.

Antananarivo is the capital, and the city of *Tamatave* is the chief port.

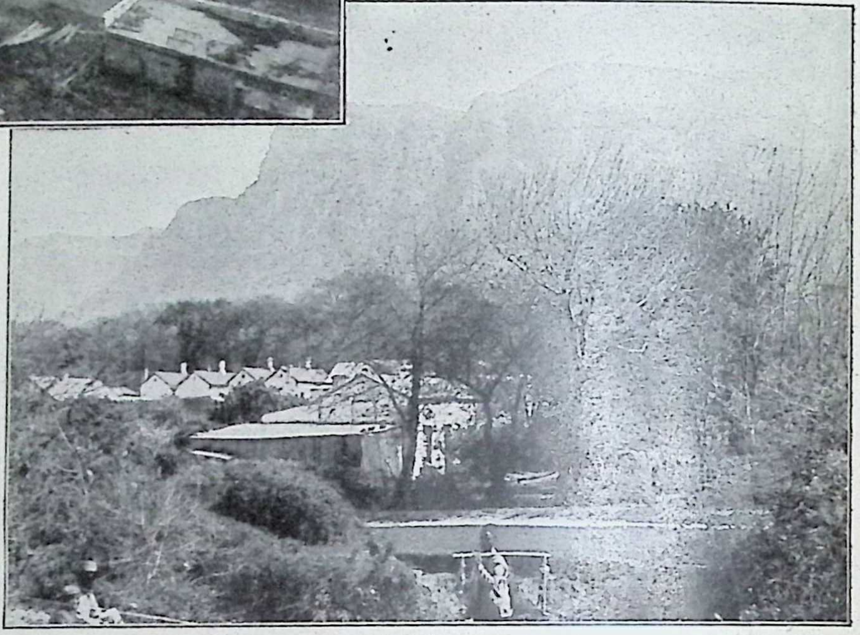

FIG. 339. *Table Mountain, South Africa, owes its name to its peculiar shape and flat summit. This magnificent mass of rock is very precipitous and can be seen from several miles out at sea.*

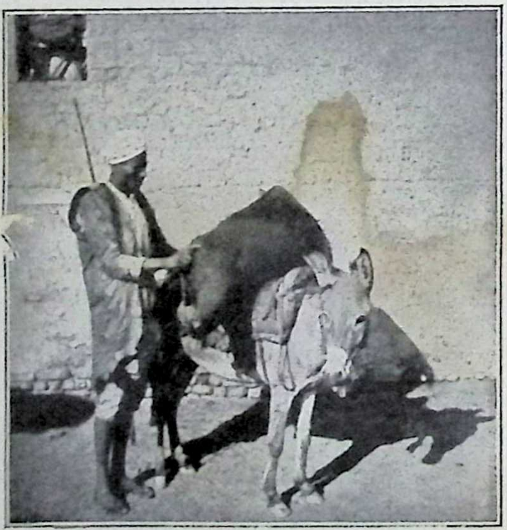

FIG. 340. *An African water carrier.*

Suggestions for Review

(1) Find out as much as you can about the Boers. (2) What part of America has a climate like The Transvaal? (3) Why does the United States import more goods from Central than from South Africa? (4) Why does water often have to be carried long distances in certain regions in Africa? (5) What season of the year is it at Christmas time in South Africa? (6) Find out why diamonds are very valuable. (7) If you lived at Cape Town and during your winter you wished to go where it was warmer, in which direction would you travel?

ASIA

LI. THE CONTINENT OF ASIA AS A WHOLE

Boundaries. Asia is by far the *largest continent*, and contains more than one-third of the land area of the world. It is more than twice the size of North America and more than four times as large as Europe.

In the north and the south, as we have already seen, the boundary between Asia and Europe now generally adopted by geographers is the one shown on the map.

On the northeast, Asia is separated from North America by Bering Strait, which is only thirty-six miles wide, and on the southwest it is joined to Africa by the narrow Isthmus of Suez. The remainder of the boundary line of Asia is formed by the oceans.

Coast Line. The continent has many large peninsulas bordering on gulfs or seas, so that the coast line is very irregular.

Along the eastern and southeastern coast there are many large islands some distance from the shore which divide the western portion of the Pacific Ocean into a number of seas nearly surrounded by land.

Between Asia and Australia the islands are very numerous, forming an *archipelago*, called the *Malay Archipelago*, or *Malaysia*.

Climate of the Continent. Asia, like its neighbor, Europe, lies mostly in the North Temperate Belt. A narrow strip along the northern coast and the islands of the Arctic Ocean are in the North Cold Cap, where it is too cold for any vegetables or cereals to grow, and where it is also very dry.

The southern part of Asia, south of a line extending from the Mediterranean along the highlands to a point on the Pacific just south of the mouth of the Yangtse-kiang, is in the Hot Belt.

In the southern part of the Hot Belt it is always very warm and very wet. Along the southeastern coast of Asia and in India the rainfall is very heavy from June to September, but during the rest of the year it is cooler and drier. The place in the world which has the heaviest rainfall is in northern India, where the yearly rainfall is nearly ten times as great as that of the eastern United States.

In Arabia and Persia the winds blow from the land most of the time, and hence there is a very slight rainfall. These regions

341. *A road built for military purposes through a pass in the Caucasus. It zigzags over the steep mountains with a gradual rise.*

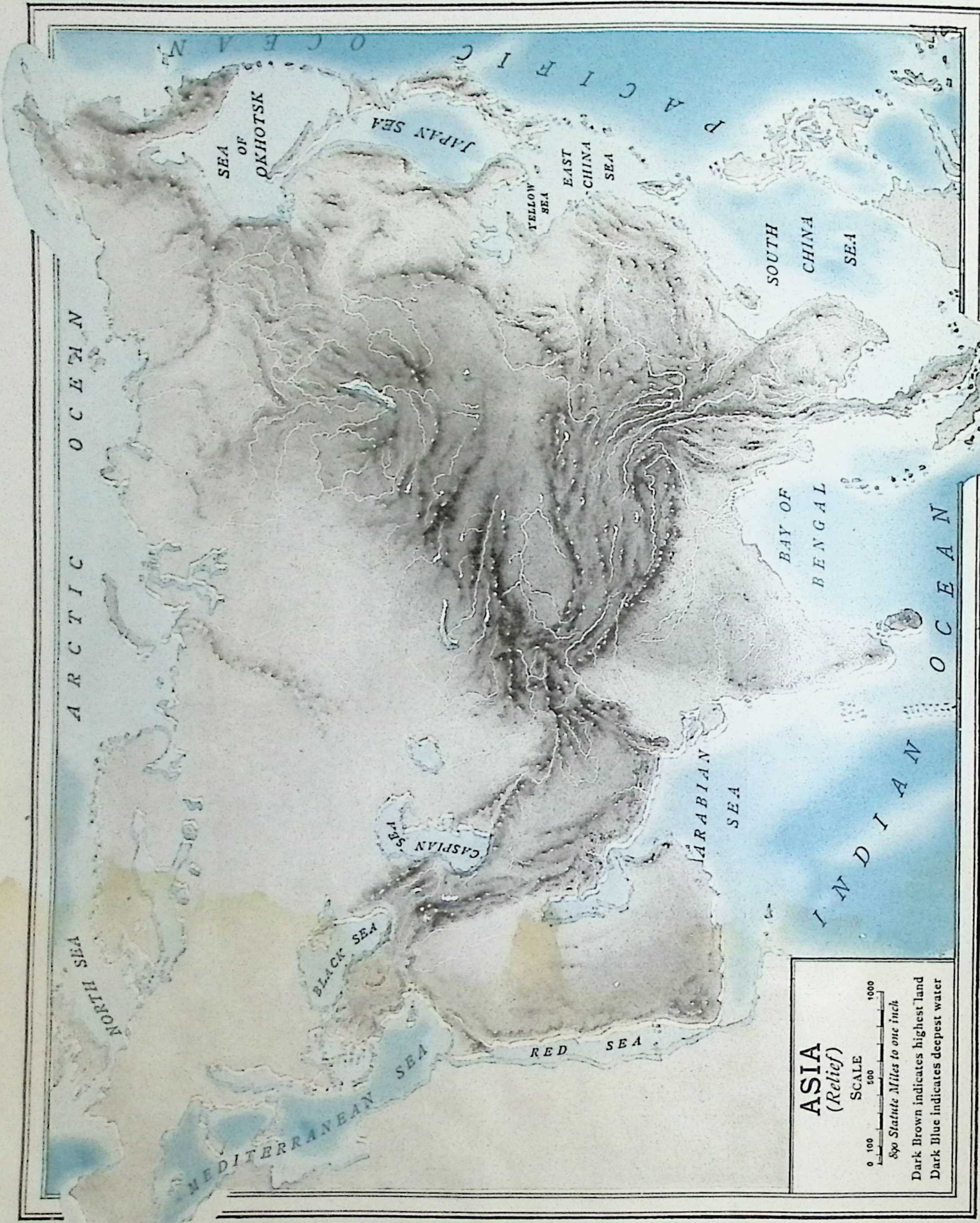

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FIG. 342.

are therefore mostly deserts like the Sahara, from which they are separated only by the narrow *Red Sea*.

The Temperate Belt. In the Temperate Belt there is a great variety of climate. Along the eastern coast south of Peking the rainfall and climate are much like those of the south Atlantic coast of the United States.

The larger part of the interior of Asia is always dry because the winds blow largely from the land rather than from the sea. Even when the winds do blow from the warm Southern Ocean, they lose their moisture on the southern highlands and reach the interior as dry winds. This area includes Gobi and Turkistan, which are mainly deserts. The highlands are always cold because they are highlands.

In *Siberia* it is warm and wet in the summer, and very cold and dry in the winter, just as we found it to be in northern North America. The continent of Asia is so large that the central portion gets very cold in the winter when the winds blow over the frozen land and ice all the time. The central part of Siberia has the coldest winter known in the world—much colder than has been found in the polar regions of Greenland, for instance.

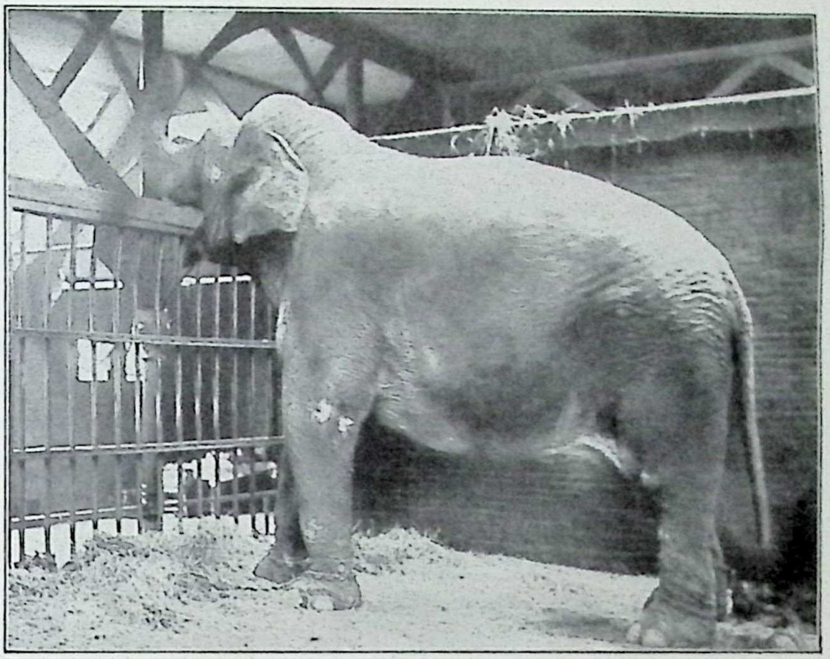

FIG. 343. *A captive tuskless elephant brought from the southern part of the continent of Asia. These elephants are easily trained.*

Surface. The interior of Asia is a vast, high plateau crossed by a series of high mountain ranges that run in a general east and west direction. The highest range is the *Himálayas* (see Fig. 353), which contain the loftiest peaks of the world. The tops of some of the peaks are more than five miles above the sea, and are so high that they have never been climbed.

Just north of the Himálayas many of the ranges come together in a great highland, forming a divide from which the rivers flow away in several directions. (See Fig. 342.) This highland is known as the *Pamirs*, and is sometimes called the "roof of the world."

Besides the great highland area that extends throughout central Asia from the Black and Caspian seas to the Pacific Ocean, the continent has two important plateau highlands in its two larger peninsulas. One is the plateau of southern India, known as the *Plateau of the Deccan*.

The other plateau is that of *Arabia*, which is bordered by coast mountains, as is that of the Deccan. There are no rivers of importance in Arabia, as the climate is very dry. These two plateaus are about as high as the plateau of New Mexico in our own country.

Plains and Drainage. Stretching down from the central highland to the Arctic Ocean is the great northern plain of Asia, a large part of which is not over 600 feet above the sea. This plain is a continuation of the northern plain of Europe, and is like the northern plain of North America in many ways.

The plain is so broad that the rivers rising in the highlands and flowing to the Arctic Ocean are very long. In the spring the headwaters of these streams thaw out before the lower portions, and thus the northern lowlands are flooded annually, in the same way as the northern lowlands of North America are flooded.

The other important lowlands of Asia are those bordering the *Caspian Sea* and *Lake Aral*, and those along the lower courses of the great southern and eastern rivers, such as the *Euphrates*, the *Indus*, the *Ganges-Brahmaputra*, the *Yangtse-kiang*, the *Hwang-ho*, and the *Amur*.

The Aral-Caspian lowland differs from all the others because the rivers do not flow to the ocean. It is a region of interior drainage like the country about Great Salt Lake in Utah.

The Yangtse-kiang and the Ob-Irtysh are the longest rivers in the world, with three exceptions—the Missouri-Mississippi, the Nile, and the Amazon.

The Islands. The islands of the Pacific, some of which are very beautiful, contain great numbers of volcanoes. Many of the volcanoes are still active.

Plants. Northern Asia is a *tundra* region in which the only plants are low bushes, mosses, and lichens, such as are found in the tundras of North America.

South of the tundras in Siberia is a great forest region containing many trees similar to those of the forests of the United States.

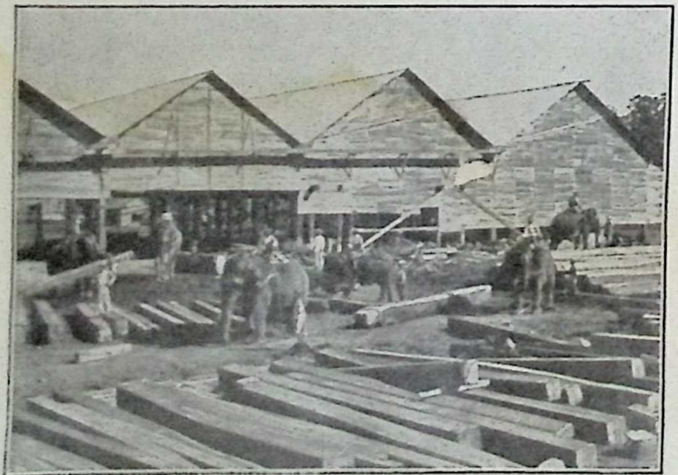

FIG. 344. *Trained elephants at work carrying timber in an Indian teak yard. They do the work which in America would require cranes or derricks.*

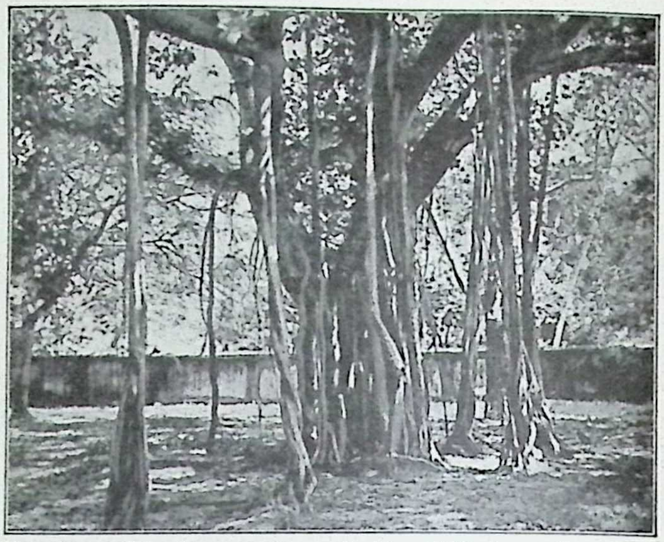

FIG. 345. *The banyan tree, India. The branches drop fibers which take root and become trunks of the tree.*

The other forest region of Asia is in the warm, moist southeast, where the trees are so thick that the forests are known in places as *jungles*. (See Fig. 345.) Some of the trees are valuable as cabinet woods, as are the trees of the Hot Belt of Central America.

The deserts, which cover much of Asia, contain few trees except in the oases. When there is rain grasses grow in those regions where it is too wet to be a desert, but where there is not enough rain for trees.

The grass regions which border the western deserts are known as *steppes*. Those in the southeast along the coast which have rain in the summer are known as *savannas*. Here the grasses grow very high and very luxuriantly in the wet season and become withered and brown in the dry season.

Animals. Asia contains many kinds of wild animals that are interesting. It is the home of the tiger, which is a kind of cat found throughout southern and eastern Asia. The elephants which are found in southern Asia are trained and are used as work animals. (See Figs. 343 and 344.)

The single-horned and double-horned rhinoceros, lions, hyenas, panthers, and many other fierce animals which we found in the Hot Belt of Africa, also abound in Asia.

babies hats!

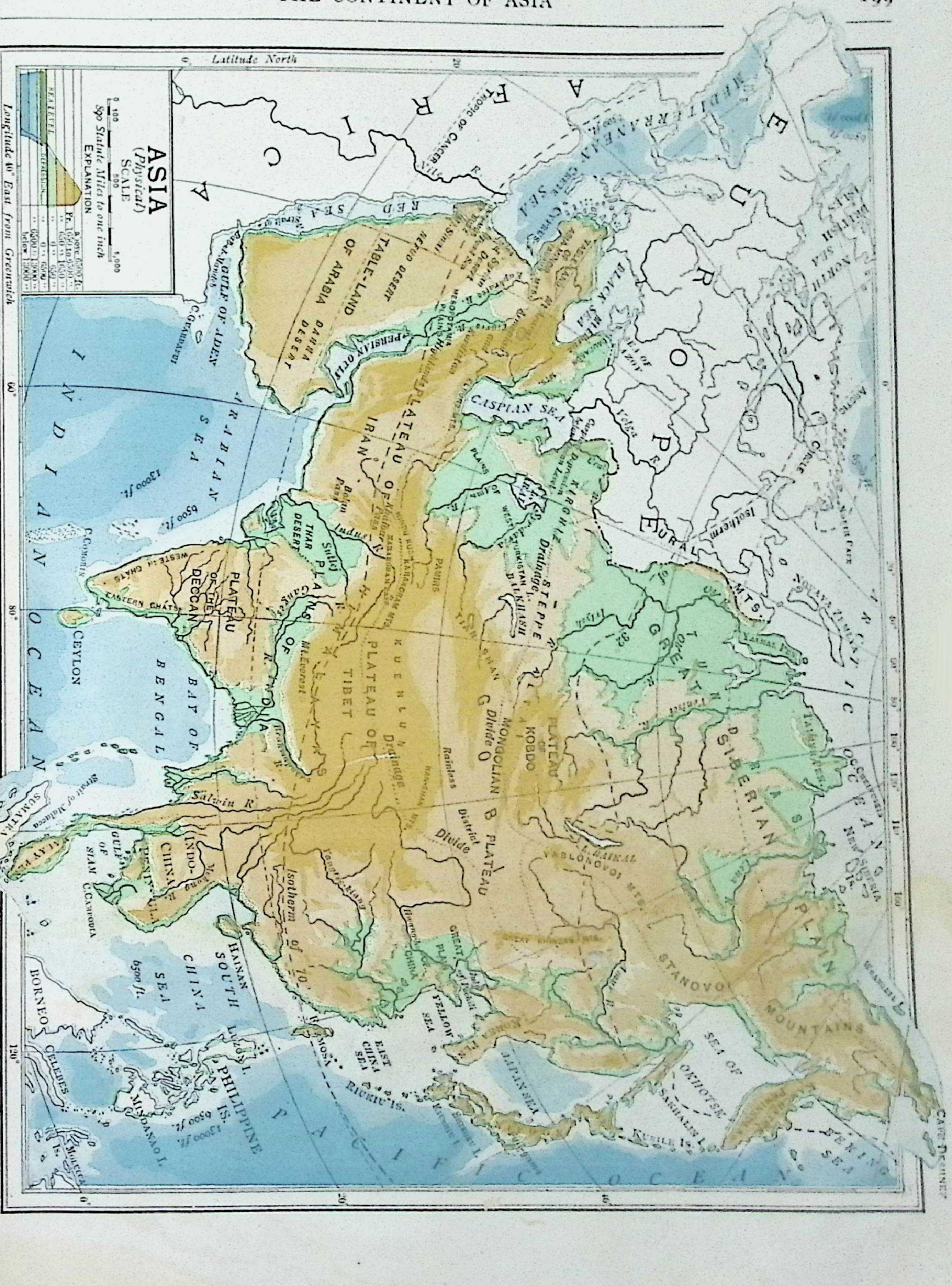

FIG. 346.

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In southeastern Asia there are many varieties of monkey, of which the orang-outang is the most interesting.

In Siberia occur polar bears, foxes, ermines, minks, sables, and other animals which are hunted for their skins.

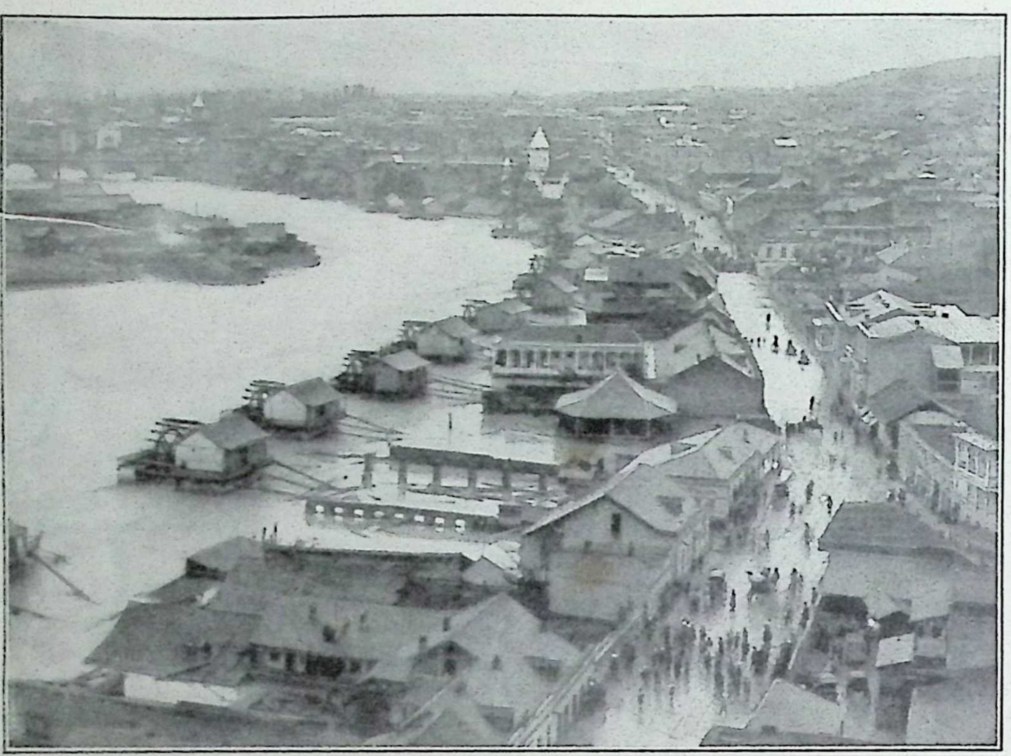

FIG. 347. *Tiflis, the leading city of Caucasia, situated on the river Kura. An important commercial center.*

Minerals. Asia is very rich in minerals, but mining has not been extensively developed. Precious stones are found in Ceylon, Burma, and Turkistan; gold in the Ural and Altai mountains and in the mountains in the northeast; silver and copper in Siberia; and coal and iron in China and Japan. About the Caucasus (see Fig. 341) there are many rich petroleum wells.

People. About three-fourths of the inhabitants of Asia belong to the yellow race. These people (see Fig. 361) are short, yellowish in color, and have straight black hair and small dark eyes. The outer corners of the eyes are slightly raised.

The yellow people are found especially in central Asia, in China, Japan, Tibet, Burma, and Siam. The ones we know the best, because there are large numbers of them in our country, are the Chinese and the Japanese.

White people are found especially in western Asia, in Siberia, and in India. Some of these people are very dark, as are the Arabs. (See Fig. 352.) In India and along the southeastern coast of Asia there are many Europeans living in the colonies of European nations.

In southern India and on many of the islands of the Malay Archipelago there are great numbers of black people similar to those who live in Africa.

The larger number of the inhabitants of Asia are not energetic and inventive as are the Europeans, and have not developed the resources of the continent. Hence most of the countries of Asia are not progressive. The most active countries, with the exception of Japan, are those that have been developed by Europeans.

Occupations. The leading occupation in the warm and moist countries of Asia is agriculture. (See Fig. 351.) Crops can be grown so easily in this region that great numbers of people can live on a small area. In fact, more than one-half of the people of the world live in southern and eastern Asia.

In northern Asia and along the northeastern coast the people live largely by hunting and fishing.

The remaining portions of the continent in which it is moist enough for vegetation to grow are occupied by wandering people who get their living through grazing.

medicine

Suggestions for Review

(1) Compare on a globe the position of Asia and the United States. (2) Compare the southern coast of Asia with that of Europe. (3) What continent has the greatest amount of desert? (4) Why is the "roof of the world" a good name to apply to the Pamirs region? (5) Find out some interesting fact in reference to the Ganges. (6) How does the Caspian differ from the Black Sea? (7) Find out some kinds of work that elephants can do.

LII. RUSSIA IN ASIA

Siberia. The Asiatic portion of the great Russian Empire includes *Siberia*, the vast desert region of *Turkistan*, which extends to the Caspian, and the country bordering the Caucasus Mountains, known as *Caucasia*. (See Figs. 341 and 349.)

We have already seen that Siberia has a severe climate with long and very dry winters. The summers are hot, but they are so short that few crops can be raised. Grazing, hunting, and fishing are the leading occupations.

The people are generally poor, but their condition is improving constantly, especially along the new Trans-Siberian Railroad from Russia in Europe to Vladivostok on the Pacific coast. (See Fig. 114.) This government railroad will be of great value in building up the country, and will give Russia a port on one of the great oceans.

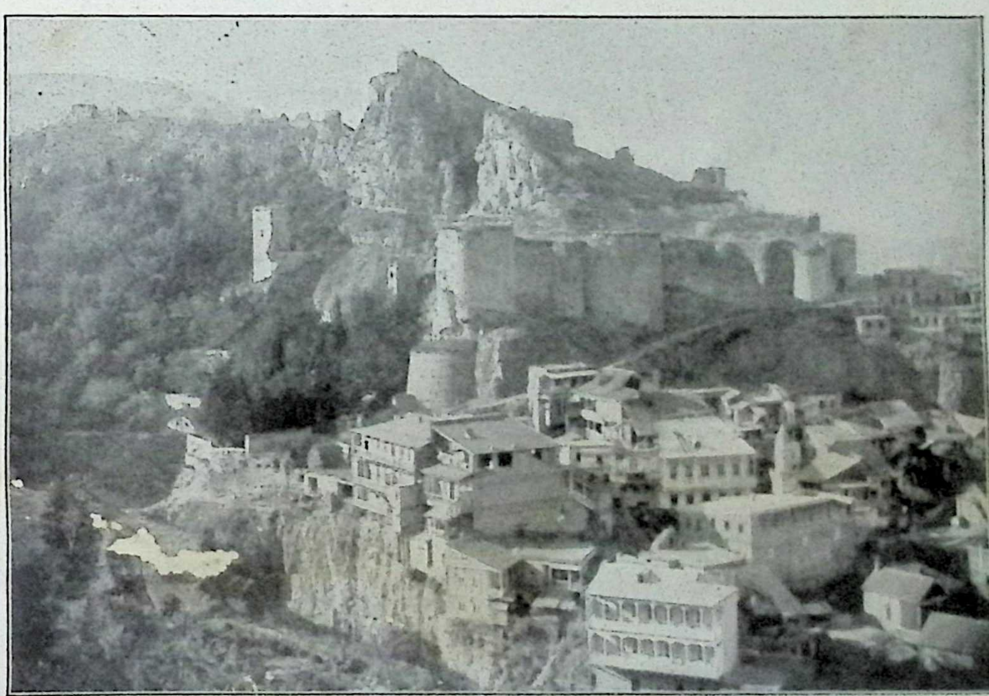

FIG. 348. *A view of the ruined battlements crowning the heights above Tiflis. Owing to its wealth the city has been many times besieged, especially by the Persians.*

There are few cities of any size in Siberia because the occupations are those that must be carried on by a scattered population.

Irkutsk, near Lake Baikal, is the chief commercial city, and is the residence of the governor-general of Eastern Siberia.

Russian Central Asia. Russian Turkistan is everywhere a rugged steppe or desert region. The inhabitants are therefore mostly *nomads*, people who move about in search of grass for their herds.

Along the river lowlands, where irrigation can be carried on, the people raise cereals, cotton, rice, and other crops that require moisture and warmth.

Tiflis, Caucasia, a railway center, is the chief city south of the Caucasus. (See Figs. 347 and 348.) Baku is the center of the oil industry.

Suggestions for Review.

(1) Why has Siberia little water commerce? (2) In what ways is Siberia like Russia? (3) Find out some interesting fact about the Trans-Siberian Railroad. (4) Why does Russia need a port on the Pacific? (5) Why do the people of the steppe regions lead a nomadic life?

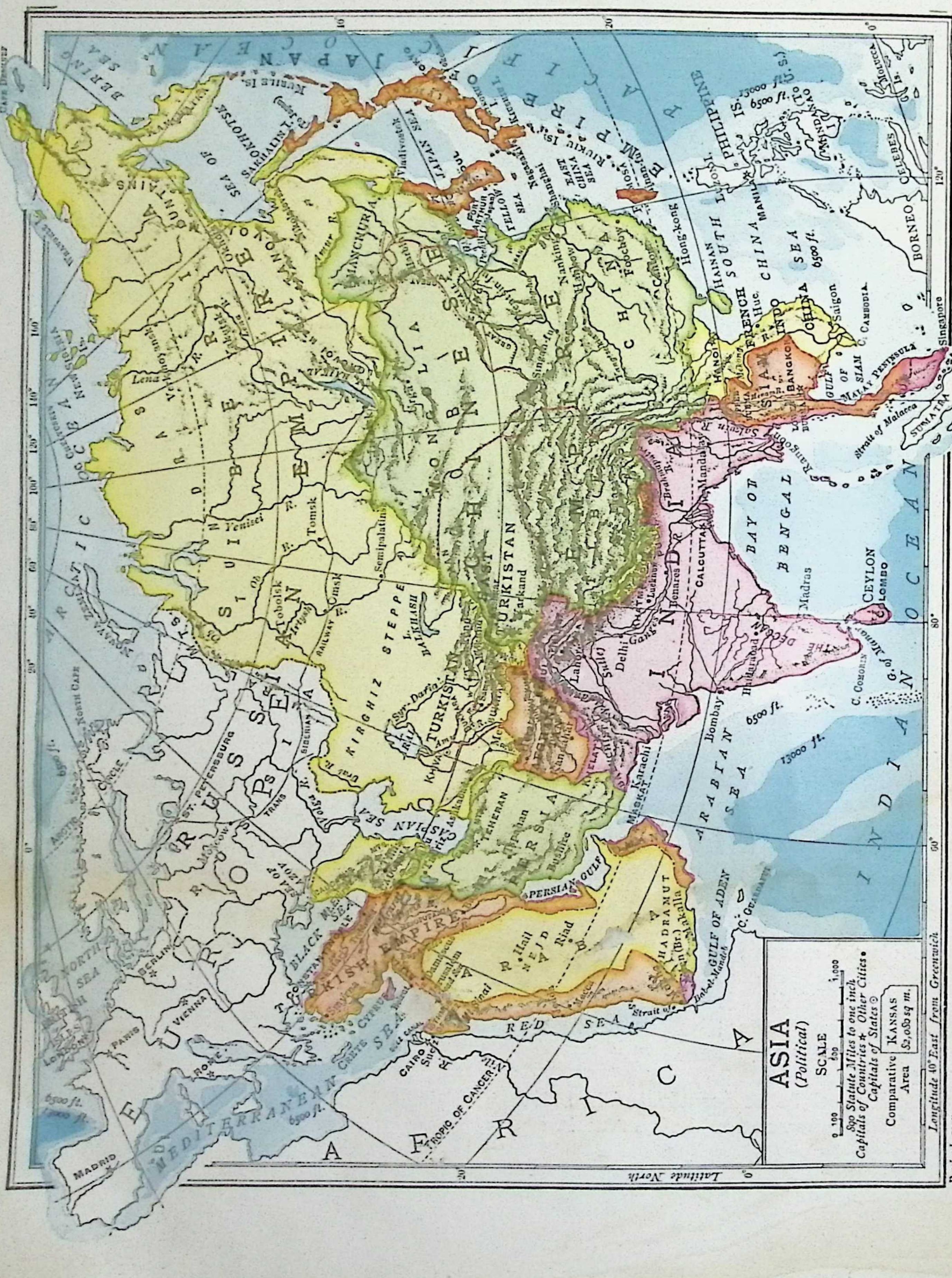

FIG. 349.

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doctors

LIII. *ASIATIC TURKEY AND ARABIA*

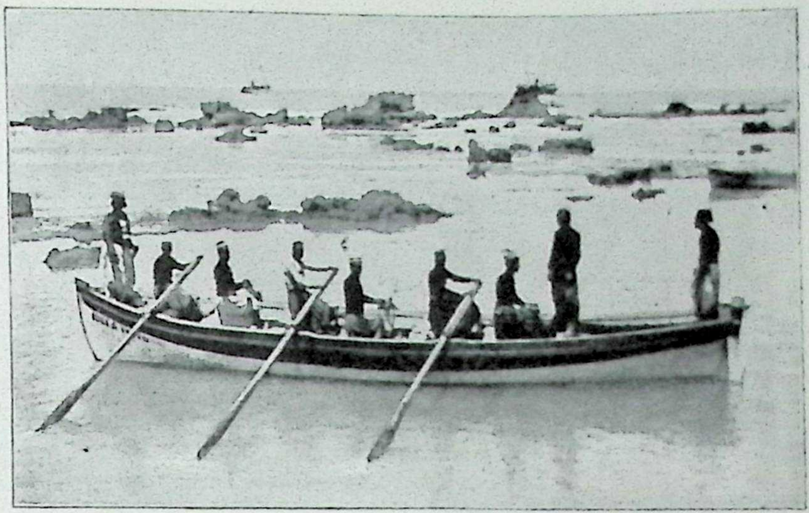

FIG. 350. *Boat and boatmen in the harbor of Jaffa. The picture shows the rocky character of the Syrian shores.*

Nature of this Region. Asiatic Turkey is much larger than Turkey in Europe, from which it is separated by the narrow straits of the *Dardanelles* and *Bosporus*. It includes *Asia Minor*, *Syria*, *Palestine*, *Mesopotamia*, and large parts of the coast of Arabia.

The larger part of Asiatic Turkey is a high plateau, with so little rainfall that grazing is the only profitable occupation. In some places there is moisture enough to raise wheat and other cereals, but the region has been known for its grazing since the earliest times.

A low plain borders the coast of Asia Minor and Syria. This plain has a climate very similar to that of other Mediterranean countries and produces the same crops—grapes, oranges, figs, olives, and mulberries.

Mesopotamia is a rich alluvial plain bordering the Tigris and Euphrates. It has a warm climate. Wherever irrigation is employed the people can raise all kinds of grain and fruit with little effort.

Syria. The most interesting parts of Asiatic Turkey are Syria and Arabia. Syria includes the Holy Land, which in biblical times was very much richer than now.

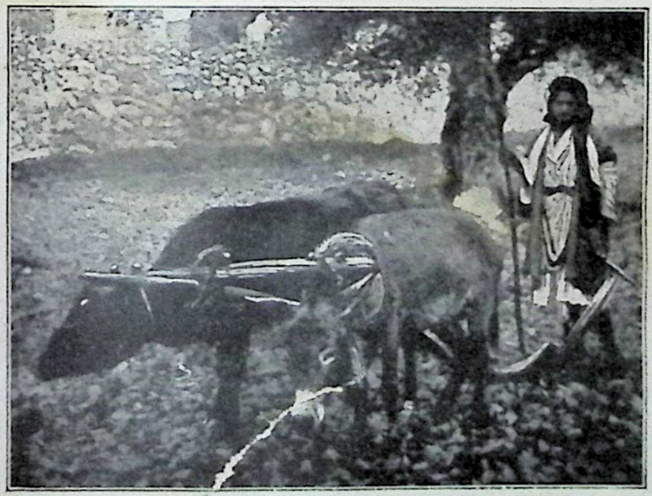

FIG. 351. *A peasant of Palestine plowing. It is a common thing to find a mule and a cow yoked together.*

The coast of Syria is straight and has no good harbors. The best are at *Jaffa* (see Fig. 350) and *Beirut*, which have always been the chief ports of the country

In the deep, narrow valley, cut off from the coast by a plateau, are the *Jordan River* and the *Dead Sea*. The Dead Sea is nearly a quarter of a mile below the sea level; hence it has no outlet, and is a salt lake.

In the Jordan valley are many places often mentioned in the Bible. The most interesting place, however, is *Jerusalem*, which is now connected with Jaffa by a railroad. Jerusalem was the center of the history described in the Bible, and is a holy city to all Christians and Jews.

Damascus, connected with the port of Beirut by rail, is the capital of Syria and a great caravan trade center. It has long been famous for its fine steel and leather.

Arabia. Arabia (see Fig. 349) is only in part a Turkish possession. The interior is largely a grazing country (see Fig. 123), and the people are nomads. Along the coast, dates, tobacco, and coffee are raised in sufficient quantities for commerce.

Mecca, the chief town, has long been important because it is the birthplace of *Mohammed*, and hence is the great holy city.

of the Mohammedans. It is visited yearly by thousands of pilgrims, who go to worship at the shrine of Mohammed.

Aden, on the Gulf of Aden, is a fortified town belonging to the United Kingdom, and is an important point because it controls the entrance to the Red Sea as Gibraltar controls the entrance to the Mediterranean.

Suggestions for Review

(1) What places in Syria are most frequently mentioned in the Bible? (2) What do we mean when we say that a place is a Mecca? (3) What part of our country has a climate most like that of Asia Minor? (4) What makes Damascus important as a trade center?

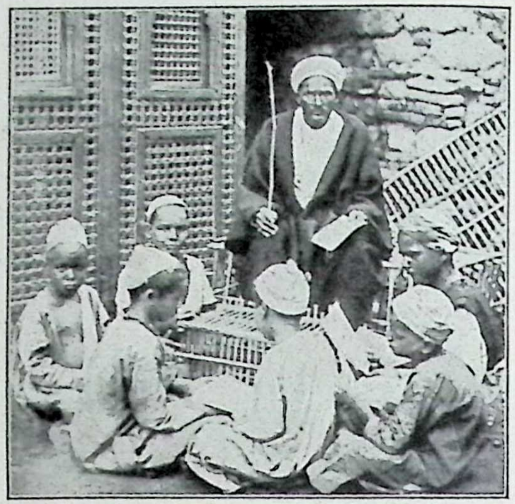

FIG. 352. *Arab boys at their studies. They use no books, most of their lessons being oral.*

LIV. PERSIA, AFGHANISTAN, AND BALUCHISTAN

Persia. Persia is mostly a high plateau bordered by mountain ranges on the north and south. The climate, therefore, is very dry, and the interior of Persia is a great desert.

Agriculture is found only in the valleys where irrigation can be carried on, and along the shores of the Caspian where there is a narrow lowland. The principal agricultural products are cotton, opium, and silk.

Afghanistan and Baluchistan. Afghanistan and Baluchistan are unimportant and little known countries. Apples, cereals, and grapes are grown by means of irrigation, and horses, goats, sheep, and camels are raised.

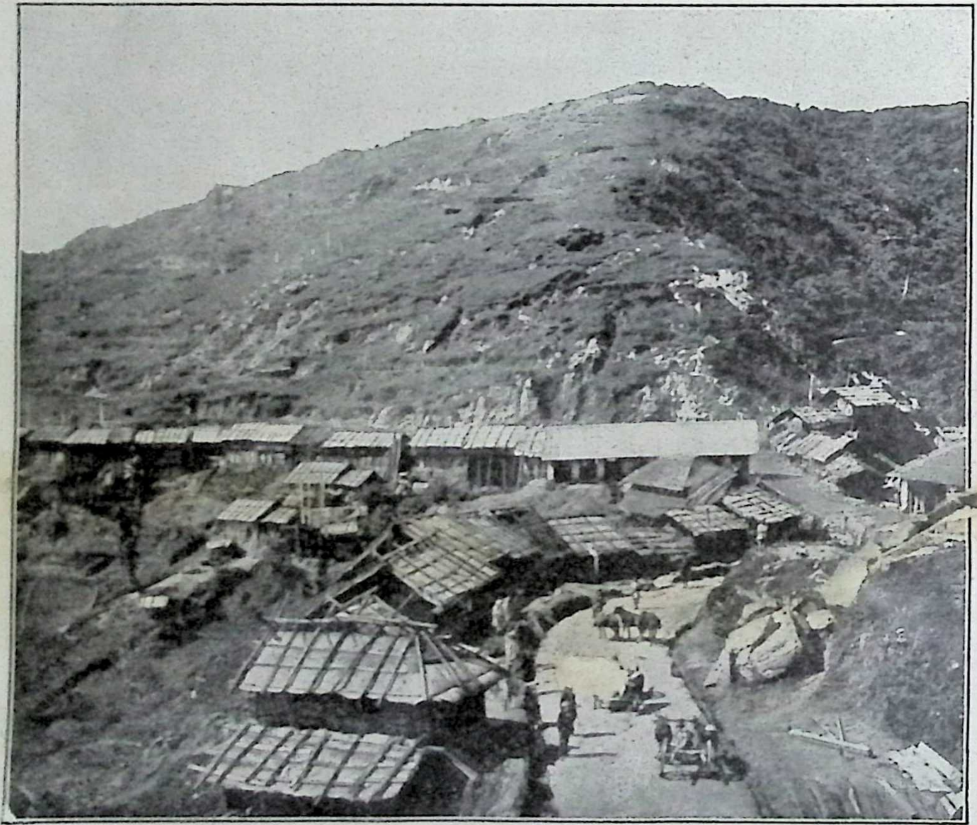

FIG. 353. *A typical mountain village in the Himálayas, eight thousand feet above the level of the sea. The roofs of the huts are covered with straw matting.*

Suggestions for Review

(1) Find out why Persia was once a very important country. (2) Why is it difficult to travel in Persia? (3) Describe the surface of Afghanistan.

LV. INDIA

The Empire of India. India occupies the great southern peninsula of Asia, and extends from the Himálayas to the Indian Ocean. It also includes a narrow strip of territory skirting the eastern coast of the Bay of Bengal.

In the north of India, on the southern slopes of the Himálayas, are two small independent countries, *Nepál* and *Bhután*.

The remainder of this great country, more than half as large as Europe, belongs to the United Kingdom, and forms the Empire of India. The king of the United Kingdom is also emperor of India.

Climate and Surface. India lies in the Hot Belt and reaches nearly to the equator. (See Fig. 125.) In the winter the winds blow from the land to the sea, and the rainfall is slight. This is the dry season. In the summer the winds blow from the warm ocean and bring an enormous quantity of rain to India. The rainy season extends from June to October.

The heaviest rainfall occurs along the lower slopes of the Himálayas, on the Ghats, and also along the eastern coast. In the western portion of India the rainfall is small and varies from year to year. Whenever the rain is too small to allow crops to ripen, famines follow and the people suffer greatly.

The rainfall of the Himálayas furnishes water to the two great rivers, the *Indus* and the *Ganges-Brahmaputra*. These rivers bring water and fine soil to their alluvial plains each year, as the Nile does in Egypt. Their valleys are, therefore, very fertile and are densely populated.

South [illegible] the great northern plain which contains the rivers mentioned, is a plateau known as *The Deccan*. This plateau has a favorable climate for agriculture and a moderate rainfall. The steep western border of the plateau, known as the Western Ghats, separates the narrow plain along the western coast from the plateau proper.

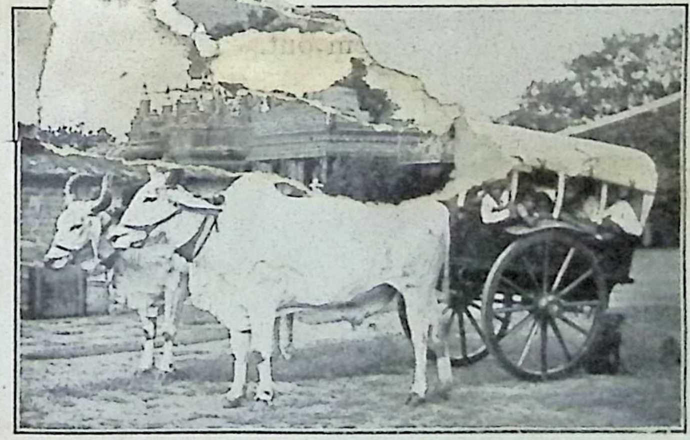

FIG. 354. *Transportation in Burma. A cart drawn by white bullocks.*

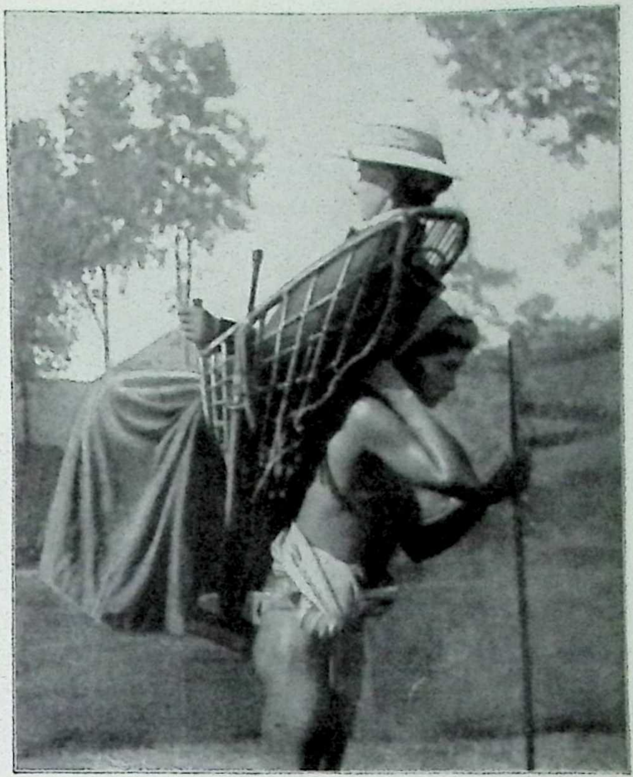

FIG. 355. *The native and very comfortable mode of traveling in India.*

The coast line of India is long but very regular. Therefore there are few good harbors. (See Fig. 349.) The leading ports, except *Bombay*, are a little way up the large rivers. Bombay is protected by islands, so that its harbor is safe.

Occupations and Commerce. The native people of India (see Fig. 356) are of many races and many religions. The larger number belong to the white race and are known [illegible] *Hindus*. The people gain their living chiefly by agriculture, because the climate and soil are practically everywhere favorable for this industry.

The principal food of the native people is rice, which is raised along the lower river courses and around the Bay of Bengal.

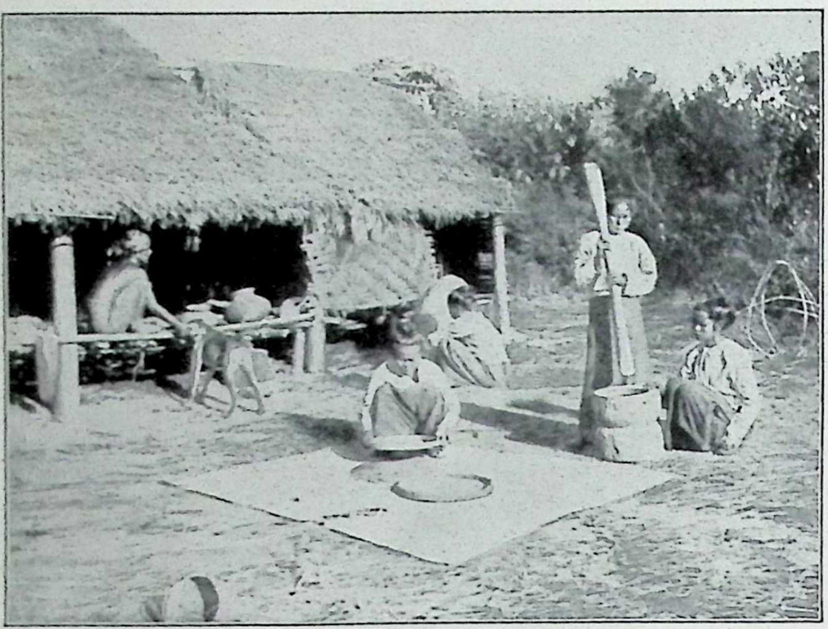

FIG. 356. *A native hut in Burma The women are pounding, sifting, and drying rice.*

The region is so densely populated that most of the rice is consumed at home.

Wheat is raised in abundance in the Upper Indus valley and on the Deccan. Rice, wheat, cotton, tobacco, jute, tea, indigo, oil seeds, and opium are the principal agricultural products. More than half the foreign trade of India is with the United Kingdom.

India is well supplied with navigable rivers and with railroads; hence interior commerce is easily carried on There are more than twenty-five thousand miles of railroads which radiate from Calcutta, Bombay, Madras, and other ports.

Cities. *Calcutta* (see Fig. 358) is the largest city in India, and is the second largest city in the British Empire. It is the chief city for foreign commerce, and manufactures jute and paper.

Bombay, the second city of India, is more important than Calcutta, chiefly because of its excellent harbor.

There are many other cities in India with a population of more than one hundred thousand each. Indian architecture is very beautiful. (See Fig. 359.) The oldest city is *Benares*, which is a holy city for the Hindus, as Jerusalem is for Christians and Mecca for the Mohammedans.

LVI. CEYLON

Southeast of the very tip of India is a large island called Ceylon. Ceylon lies in the Hot Belt and belongs to the United Kingdom. Its products are chiefly tea, rice, cocoanuts, cacao, and spices. It is the third tea-producing country of the world. The capital, Colombo, has a very magnificent harbor, which has been made by the building of a great breakwater to keep the waves from spending their full force on the shore. It is the most central port of the Indian Ocean and the chief port of the island. Therefore it is of great commercial importance.

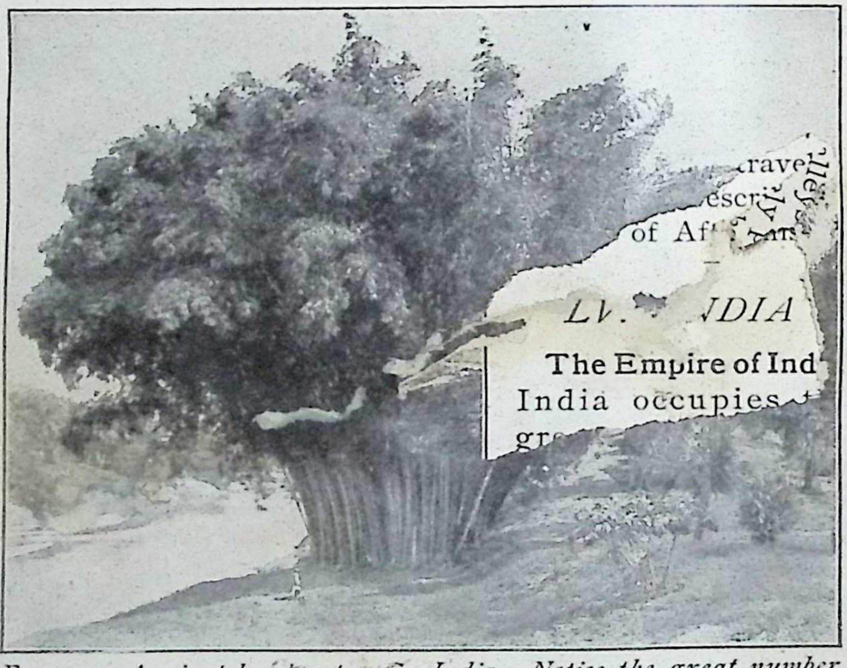

FIG. 357. *A giant bamboo tree in India. Notice the great number of separate shoots or branches, and the height as compared with the standing figure.*

Suggestions for Review

(1) In what way is India unlike any other colony of the United Kingdom? (2) Find out something about an Indian famine. (3) By what route would you go from Bombay to England, and why? (4) Why did the early explorers all desire to find a route to India? (5) What is the largest city of the British Empire? (6) What have you seen that was made of bamboo?

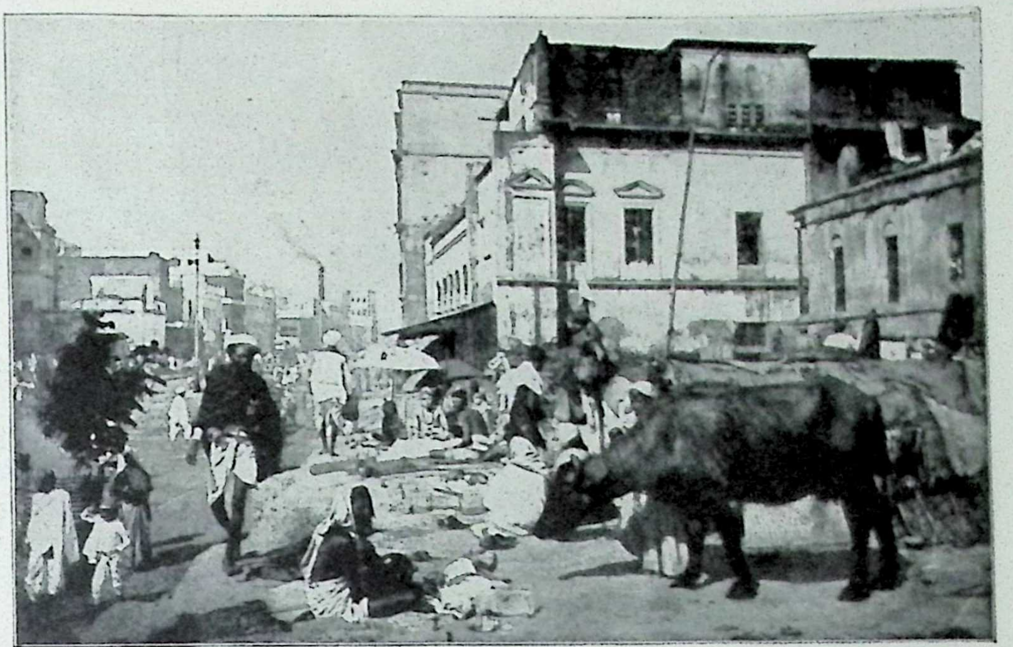

FIG. 358. *A market scene in the streets of Calcutta. This city, through the English influence, is rapidly becoming modernized.*

LVII. CHINESE EMPIRE

Countries of the Empire. The Chinese Empire, which is much larger than the United States, including Alaska, is made up of *China*, *Mongolia*, *Tibet*, *Manchuria*, and *East Turkistan*. China is, however, the most important and best known country of the empire, because the Chinese have an active commerce with other nations. (See Fig. 114.) China is now much larger than it was formerly. The boundary as it existed 2,000 years ago is marked in part by the Great Wall, which is still in a good state of preservation and an object of great interest. (See Figs. 360 and 363.)

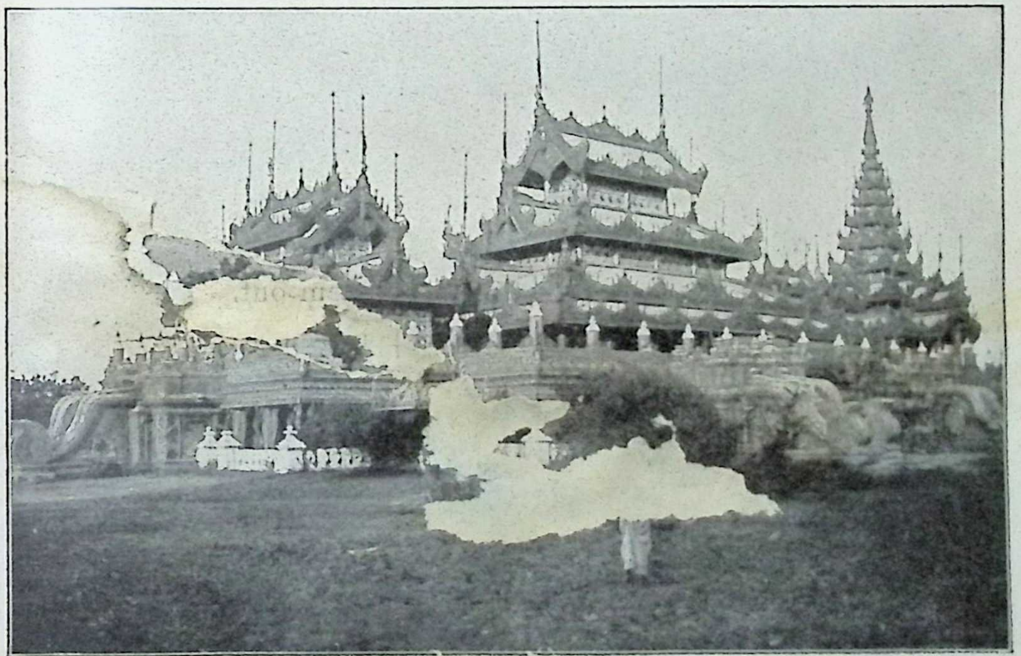

FIG. 359. *A royal palace in Mandalay, the capital of Burma, India. The minarets and decorations are most beautifully carved. In the foreground is one of the palace servants.*

Surface. The Chinese Empire is largely a mountainous and hilly country, and contains in Tibet the highest mountains of the world. These mountains rise above a high plateau, which itself is about three miles above the level of the sea.

The eastern part of Manchuria and the southeastern parts of China are vast alluvial plains

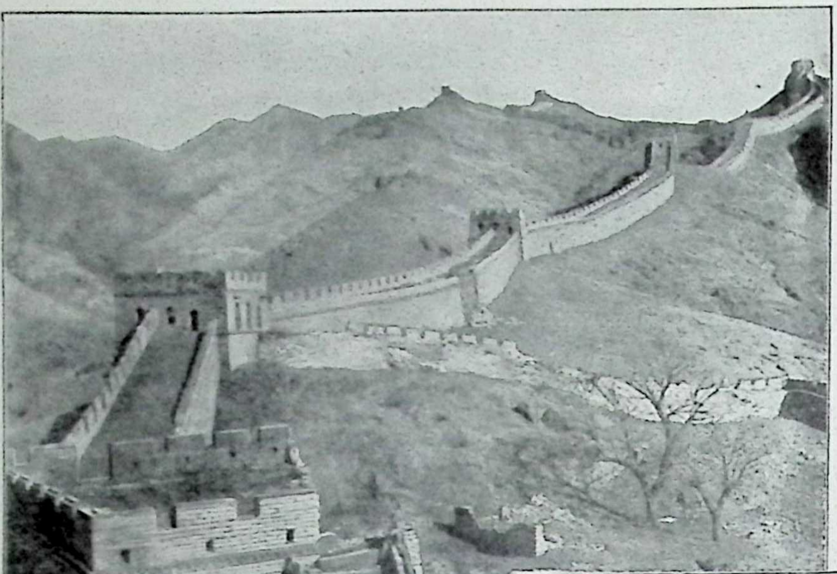

FIG. 360. *A section of the Great Wall of China, which is now partly in ruins.*

that have been built up by the great rivers. The largest plain is that of the *Hwang-ho*, or *Yellow* River, so called because of the color of its detritus.

This river is also remarkable because it has changed its whole lower course several times within a few centuries. It now flows into the Gulf of Pechili, but for a long time previous to 1853 it flowed into the Yellow Sea, more than two hundred and fifty miles south of its present mouth.

Climate. The climate of the Chinese Empire is varied. The lofty mountains and plateaus of Tibet, Turkistan, and Mongolia are very cold in the winter, very hot in the summer, and extremely dry at all seasons.

South of the Yangtse-kiang River the rainfall is similar in amount to that of the southern Atlantic states in America.

People. The people of the Chinese Empire nearly all belong to the yellow race. There are, however, strong differences between the Mongolians in Mongolia, the Tibetans in Tibet, and the Chinese in China. The Mongolians and Tibetans are largely nomads, who follow their flocks and herds.

The Chinese carry on agriculture, manufacturing, and commerce, and are an important race, but they are not progressive and have not made use of the natural riches in which their country abounds.

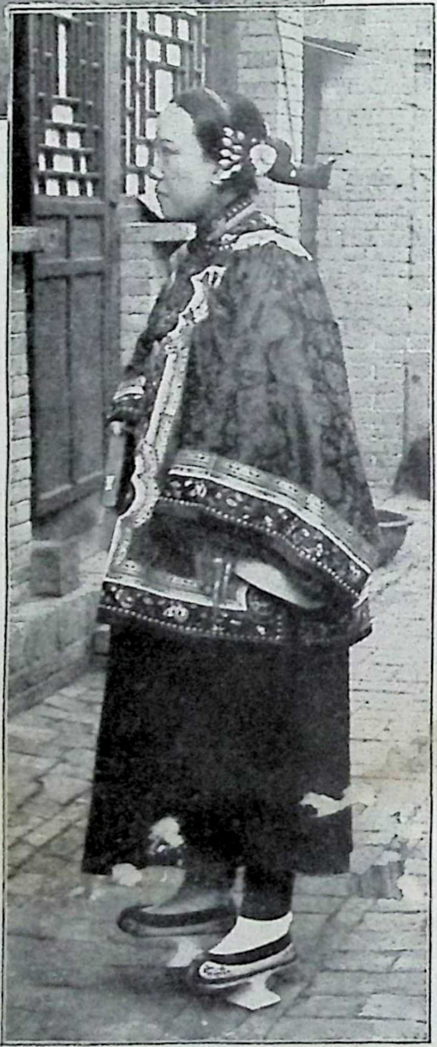

FIG. 361. *A woman from the north of China. Notice the peculiar head-dress, the shoes, the sleeves, and the long finger nails.*

LVIII. CHINA

Occupation of People. Agriculture is by far the chief industry of China, because the warm, moist summers, the good soil, and gentle slopes are all very favorable. The lower regions are devoted to the raising of rice, sugar cane, and cotton.

The most important crops, however, are tea and silk. Silkworms are raised [illegible] numbers, [illegible] found wherever there is moisture and heat enough for the tea plants. Tea, silk, and porcelain have always been the most important exports of China.

There is but little manufacturing in China, but cotton and silk mills are now being built near some of the large cities.

Commerce and Cities. The exports of China, like those of other eastern countries, are largely those that are very valuable in proportion to their weight. For instance, a shipload of silk and other Chinese products is worth many times as much as a shipload of wheat.

China has few navigable rivers and few railroads. The Yangtse-kiang is navigable for more than 1,000 miles, but as a rule goods (see Fig 362) are brought to the coast with great difficulty and at large expense.

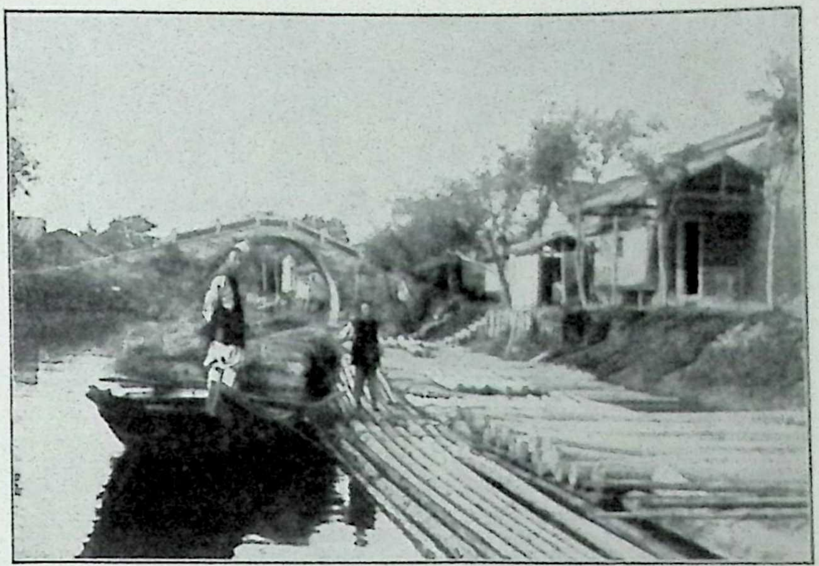

Fig. 362. *Transporting goods over the waterways in China. Notice the raft made of bamboo poles, and in the distance the typical Chinese bridge.*

The ports at which trade is carried on are called "treaty ports." Some of these ports have been open for foreign trade for about seventy years.

Tientsin-fu is the port for the capital, *Peking*, which is the seat of the central government of China. (See Fig. 349.)

Hong-kong, near Canton, is built on a rocky island and belongs to the United Kingdom. Hong-kong has a fine harbor and carries on a large part of the trade with the interior.

Other small ports have been secured by different governments in recent years, so that the United Kingdom, France, Germany, Portugal, and Japan each owns a bit of territory in the Chinese Empire.

The Dependencies of the Empire. The dependencies of China are not very important, though they are large and contain many inhabitants.

Manchuria is the only dependency in which agriculture is carried on to any extent, the other provinces being almost entirely devoted to grazing, if occupied at all.

Lhasa, in Tibet, is the holy city of the *Buddhists*, as the people are called who profess Buddhism. Only a very few Europeans have ever succeeded in getting into the city, because it is jealously guarded, and foreigners are driven away. In fact it was not until a few years ago that Europeans were allowed even to live in the provinces of China.

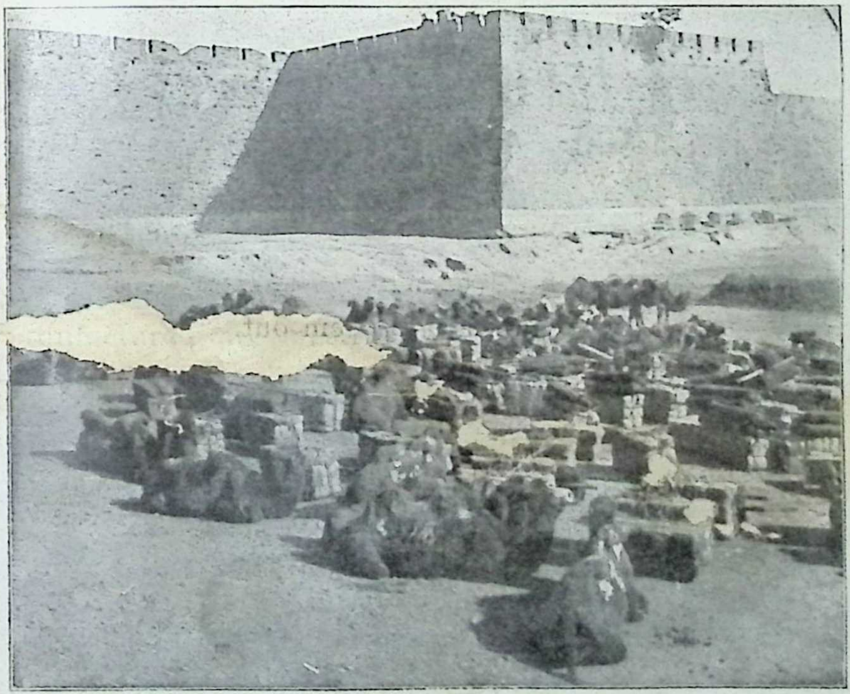

Fig. 363. *A caravan of camels resting outside of the Great Wall of China. Trade with Russia is largely carried on by caravans. Silks, tea, spices, and other merchandise are* [illegible]

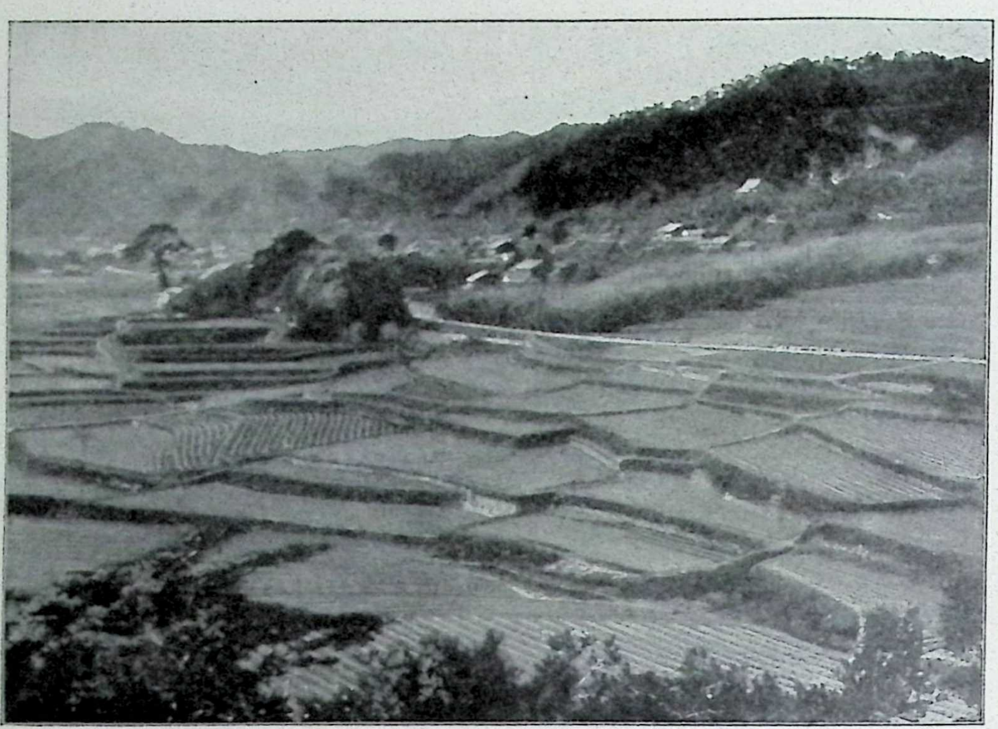

FIG. 364. *Rice fields in one of the low, well-watered valleys of Japan. The terraces are continually being fed with water.*

Suggestions for Review

(1) Find out about some important event which has happened in China within a few years. (2) Describe some singular customs of the Chinese. (3) What have you ever seen that came from China? (4) Examine a tea chest at a grocery and see where it was packed.

LIX. THE JAPANESE EMPIRE

An Island Empire. The Japanese Empire includes all the islands from Kamchatka to Formosa, except one-half of the island of Sakhalin. It also contains the peninsula on which Port Arthur is situated.

The chief islands of Japan are *Niphon (Hondo)*, which, with a few neighboring smaller islands, forms the chief portion of the empire, and *Formosa*.

Surface. The islands are very mountainous and the coast is irregular. There are many active volcanoes. The loftiest and most beautiful mountain is *Fujiyama*, which is more than 12,000 feet in height. It rises abruptly from a lowland, and forms the most conspicuous feature of the landscape.

Owing to the volcanic activity the islands have many earthquakes each year; hence important buildings and railway bridges must be built to stand severe earthquakes without being damaged.

The rivers are short, rapid torrents in the mountains and broad, shallow streams in the lowlands. They are not navigable and hence are of no commercial importance.

Climate. The climate is moist almost everywhere and ranges from cold in the north to very hot in the south. The islands have an abundance of rainfall; hence they are very fertile. Forests abound on the mountain slopes, and grass and flowers grow everywhere in the lower lands. The smaller grasses have but little [illegible] to grow, owing to the other forms [illegible] tion which crowd th[illegible]

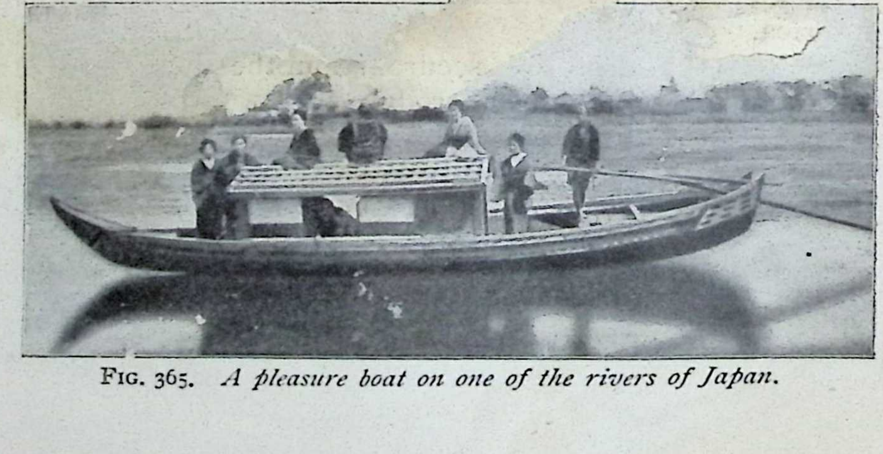

FIG. 365. *A pleasure boat on one of the rivers of Japan.*

Bamboo (see Fig. 357), which is a very tall grass and grows abundantly, is used for food, for paper, and in making utensils and furniture of all kinds. Japan is a land of very beautiful flowers in the summer.

People. The Japanese (see Figs. 365, 366, and 367) belong to the yellow race, but are more progressive and advanced in civilization than any other yellow people. They are noted for their politeness, are very cleanly, and very fond of beauty, either in art or in natural scenery. Within the last fifty years the Japanese have adopted many European ways and have now become an important commercial nation.

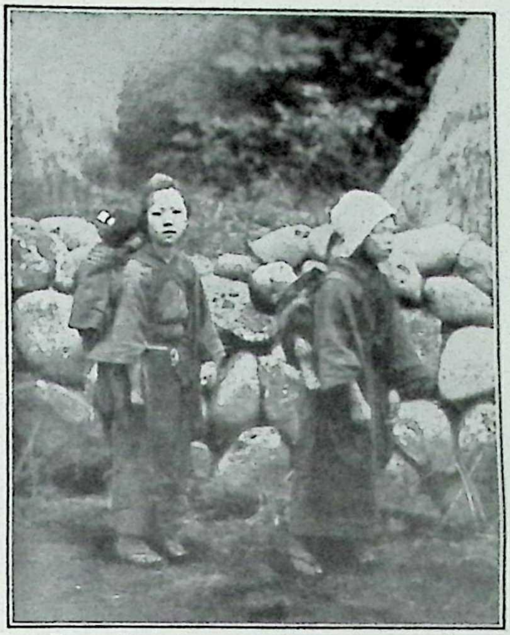

FIG. 366. *Japanese girls, showing the method of carrying their baby brothers and sisters.*

Occupations. The cold northern island of *Yezo* is largely occupied by a very hairy race of people who are known as *Ainus*. The Ainus get their living chiefly by hunting and fishing, like the Eskimos. In the other islands agriculture and manufacturing by hand are the chief occupations.

Cereals are grown in the north, and rice (see Fig. 364), sugar cane, tea, and cotton are raised in the warmer southern islands.

T[illegible] f exports are silk, cotton manu-[illegible] coal, copper, and tea. The articles [illegible] small objects of art that are grea[illegible] in Europe and Ame[illegible]

In Formosa camphor is [illegible] fr[illegible] forest and forms a valuable product.

There are few railroads in Japan, owing to the mountainous character of the country. There are many good harbors, however, and Japan is rapidly developing an important oceanic trade.

Cities. *Tokyo*, with a population of more than a million, is the capital and chief city. It is rapidly becoming of great importance as a manufacturing center.

The port for Tokyo is *Yokohama* (see Figs. 114 and 349), which has a fine harbor and carries on more than half of the export trade of the empire.

LX. KOREA

Characteristics of the Country. The Korean Empire occupies the large peninsula between the Yellow Sea and the Japan Sea. It is under the protection of Japan. The country is everywhere hilly and in parts mountainous. The soil, however, is rich and is well developed, more than three-fourths of the people being farmers. The climate also is favorable for agriculture, as the summers are warm and the rainfall is usually abundant during the growing season.

Products and Exports. The principal crops are cereals, beans, and tobacco, like those found in a similar latitude in eastern North America. The country is very rich

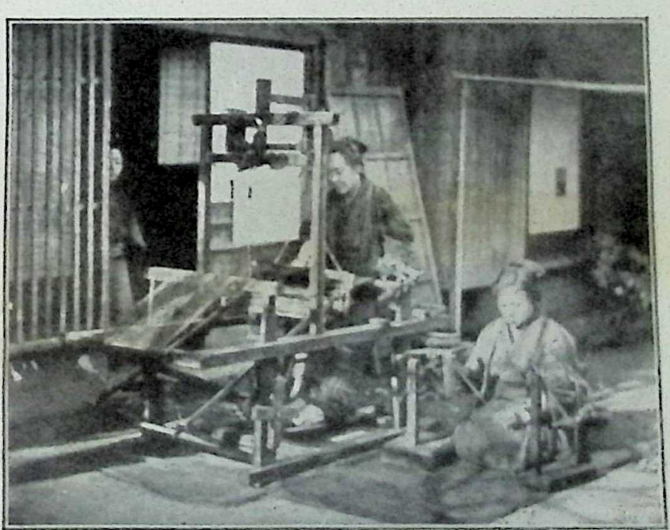

FIG. 367. *Japanese women spinning and weaving silk. The silk goods made in Japan are often very beautiful and very costly.*

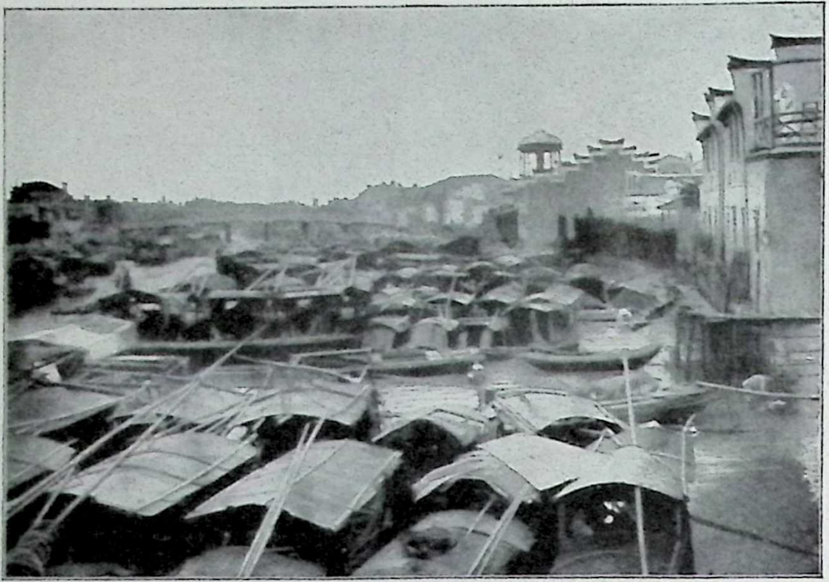

Fig. 368. *A cluster of house boats on the Grand Canal near Shanghai. The owners live in these flimsy craft.*

in minerals, especially in gold, silver, copper, coal, and iron. The mines have not been developed to any great extent, however. There is some manufacturing.

The principal exports are rice, beans, hides, and ginseng. Ginseng is a root which grows abundantly and is highly valued by the Chinese as a medicine.

People. The people of Korea belong to the yellow race, but their language is very different from that of either the Chinese or Japanese. Europeans were not allowed in the country until 1882. Now there are several open ports and a large foreign population, the larger part of whom are Japanese. *Söul* is the capital and chief city. Many Europeans live here for sake of the trade.

Suggestions for Review

(1) Describe some picture you have seen of some part of Japan. (2) Why is Japan a pleasant country to visit? (3) Would you prefer to visit Japan or Korea? Why? (4) Give some reasons why Korea is not so important as Japan.

LXI. INDO-CHINA

Siam and French Indo-China. Indo-China includes *Siam, French Indo-China*, *Burma*, the *Malay States*, and the *Straits Settlements*. The region is hilly or mountainous and has a warm and moist climate. As a result, vegetation grows abundantly and costly woods are important products.

Siam is an independent country of very great richness. Rice, tobacco, and cotton are the principal crops, and rice, teakwood, and tin are the chief exports.

Bangkok is the capital and chief city of Siam. It is built beside the river *Menam*, and many of the people live on the river in floating houses, like those used in China (see Fig. 368).

French Indo-China has a climate very favorable for rice culture, and in the lowlands rice is the principal crop raised. *Hanoi*, the chief port of the north, and *Saigon* of the south, are among the most progressive cities of the Pacific coast of Asia.

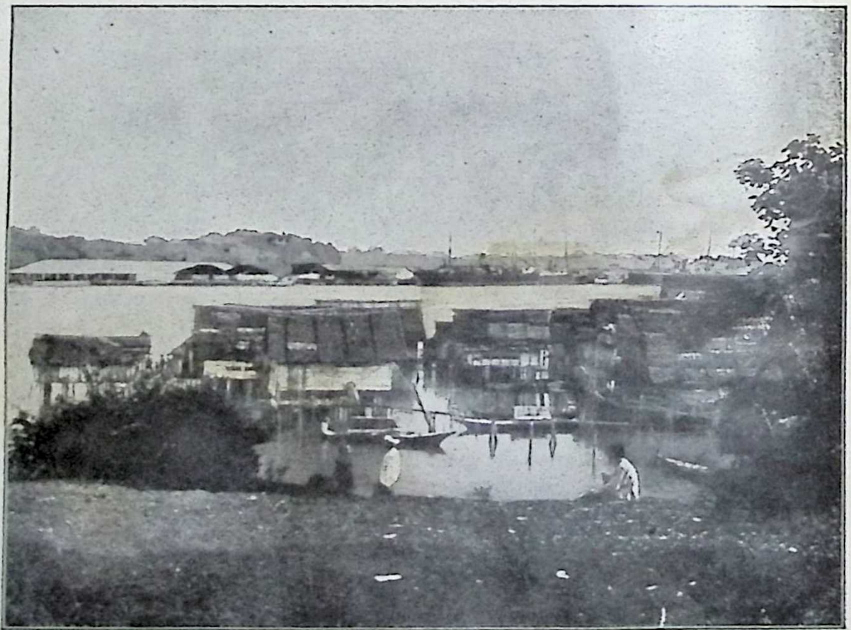

Fig. 369. *Houses built on piles near the banks of a river in Singapore.*

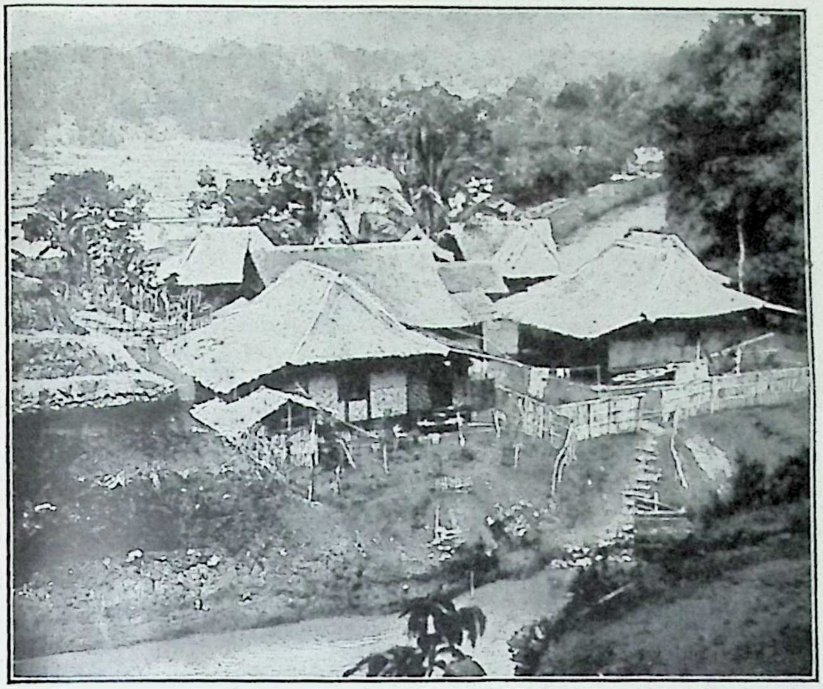

FIG. 370. *A native village in Java. Notice the roofs of grass and the fences of matting.*

The Straits Settlements. The southern end of the Malay peninsula and the neighboring islands contain several small native states and British settlements. Tin is a very important product.

The island of Singapore is a densely forested island, on the south side of which is the city of *Singapore*. (See Fig. 369.)

Singapore has rapidly developed into a very important port, owing to its position. All vessels plying between Europe or India and the east coast of Asia must pass this point. Therefore it is a calling place for vessels of more than fifty oceanic lines.

LXII. THE MALAY ARCHIPELAGO

Characteristics of the Islands. The Malay Archipelago includes a countless number of small and large islands south and southeast of Asia. (See Figs. 371 and 374.)

Besides the Philippines, which we have already mentioned as belonging to the United States, the larger islands are *Java* (see Fig. 370), *Sumatra*, *Borneo*, the *Celebes*, and *New Guinea* (see Fig. 371).

The more important islands of the archipelago belong to the Netherlands and form the Dutch East Indies. (See Fig. 374.) Nearly all the islands are volcanic, and many of the peaks are active. The climate is very moist and very warm, and hence vegetation is everywhere abundant. (See Fig. 370.)

The chief products are coffee, tobacco, tropical fruits, spices, tin, and costly woods. The animals, many of which are similar to those of Asia and Australia, are also very numerous, and bright-colored birds are found everywhere in the luxuriant forests.

The largest city of the archipelago is *Batavia* in Java. This city is the most important port (see Figs. 114 and 374) of this part of the world except Singapore.

Suggestions for Review

(1) What do you use frequently that probably came from the Malay Archipelago? (2) Compare the climate of the East Indies and the West Indies.

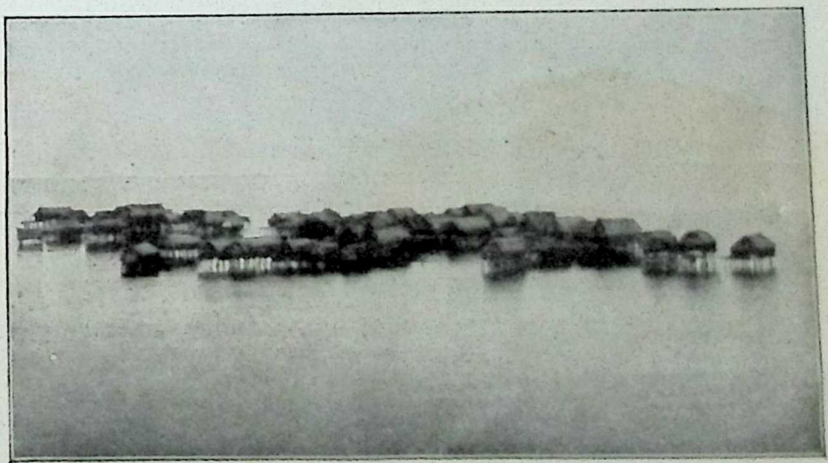

FIG. 371. *A marine fishing village in New Guinea. The houses are built on islands or upon piles in shallow water.*

bareheaded babies.

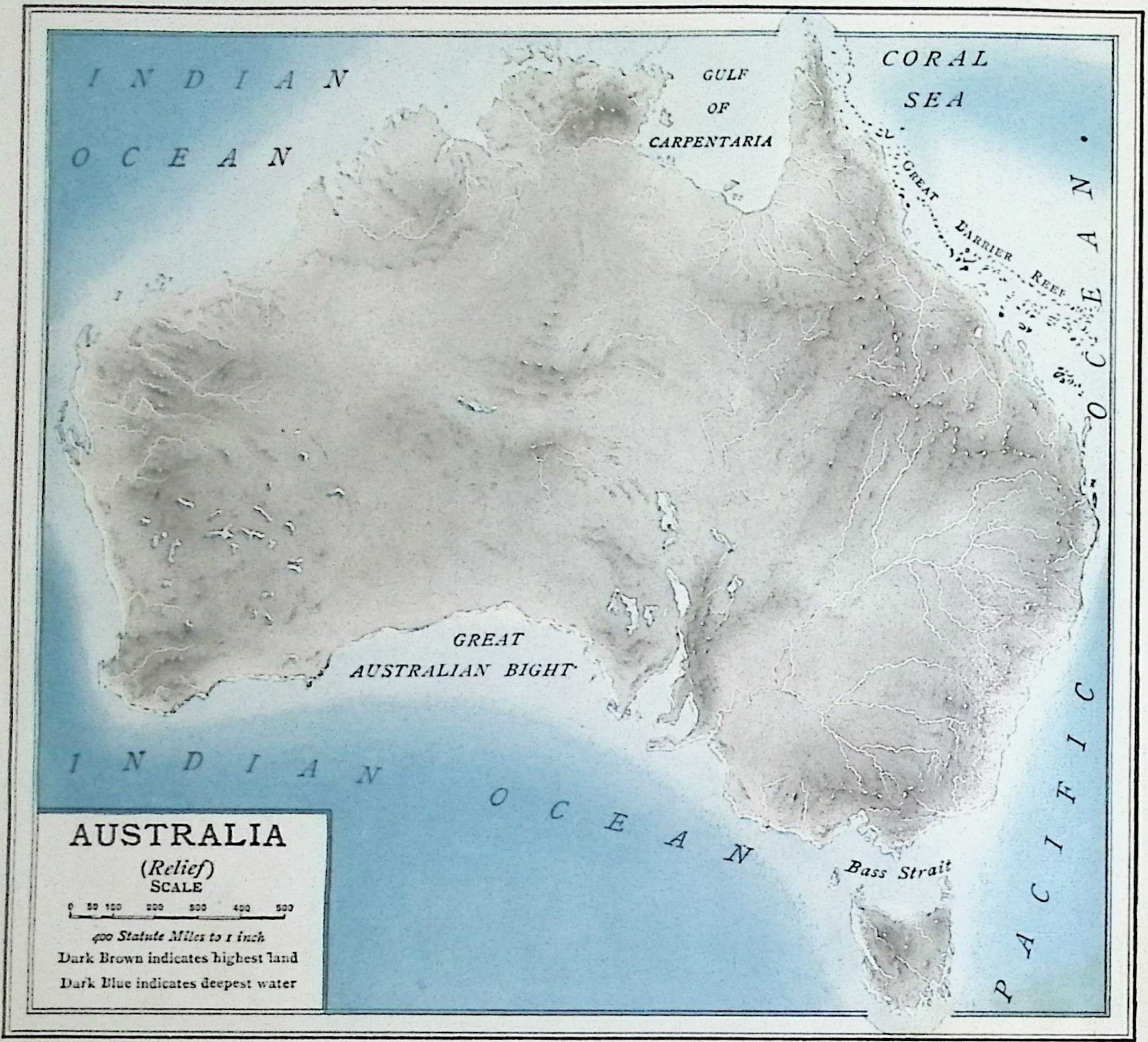

FIG. 372.

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LXIII. AUSTRALIA

The Continent of Australia. Australia is the smallest of all the continents, being about the size of the United States, not including any of its dependencies. It is a colony of the United Kingdom with a government like that of Canada.

Climate and Surface. The southern part of the continent is in the South Temperate Belt and the remainder is in the Hot Belt. Mountains (see Fig. 372) border the east, the southwestern, and the northern coasts.

The winds are mostly from the southeast, and thus the eastern mountains receive an abundance of rain on their coast or windward sides. The rest of the continent, which is a great plain (see Fig. 373), is so cut off from moisture by the bordering mountains that it is a desert, or nearly a desert.

As a result of the dryness there are few rivers of consequence. The largest is the Murray River in the southeastern portion.

People. In the interior of the continent there is a large number of the original

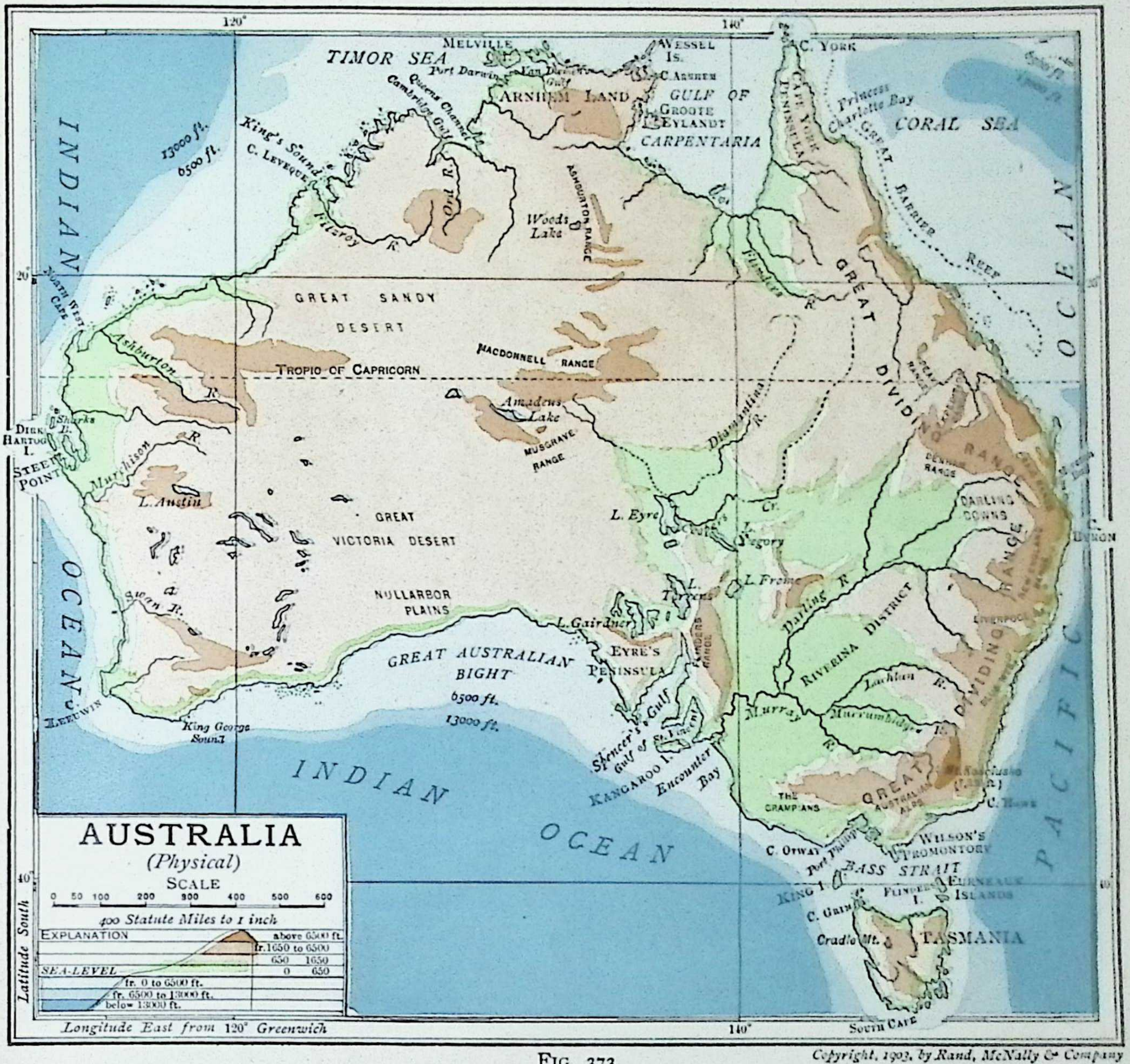

FIG. 373.

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Revised, 1906

inhabitants of Australia who occupied the whole region before it was discovered and developed by white men.

These people, the so-called *aborigines*, are a dark brown, almost black, people, who are very wild and who lead a savage life. They are known as Bushmen. Their tools and weapons are very simple. They do not even have the bow and arrow which were so common among our Indians. Spears, clubs, and boomerangs are their principal instruments for hunting.

Animals and Plants. The animals of Australia are very interesting, for there is not an animal on that continent like those we have in our forests in the United States except those which have been taken to the country by the white men.

The most interesting animals are the *kangaroos*, which have very long, powerful hind legs that enable them to leap over the ground almost as fast as a horse can run.

The plants are also very interesting and many of them are found only in Australia.

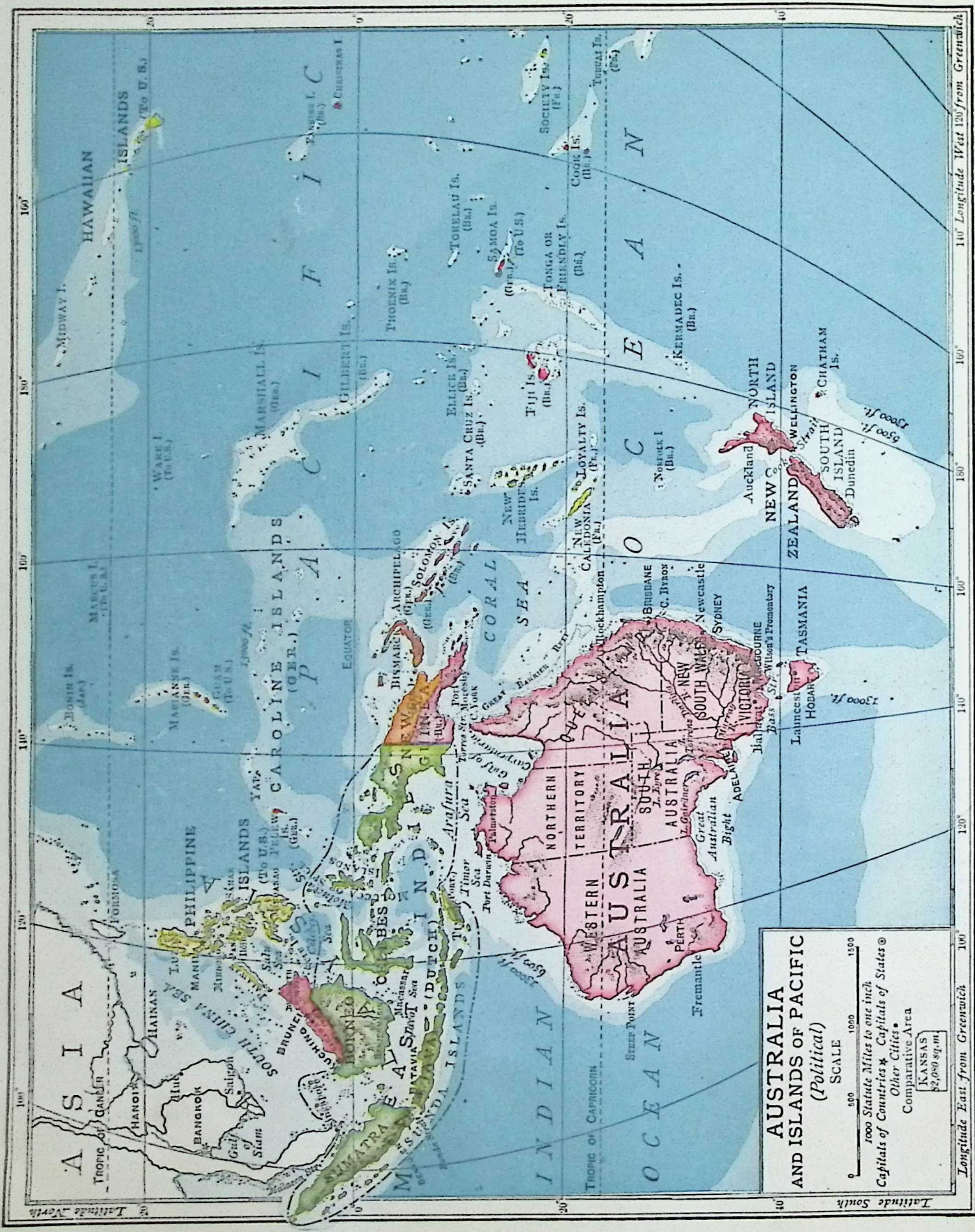
AUSTRALIA
AND ISLANDS OF PACIFIC
(Political)
SCALE
0 500 1000 1500
1000 Statute Miles to one inch
Capitals of Countries ★ Capitals of States ⊛
Other Cities •
Comparative Area
KANSAS 82,080 sq. mi.
Longitude East from Greenwich
140° Longitude West 120° from Greenwich
Latitude North
Latitude South
ASIA
TROPIC OF CANCER
HANOI
HAINAN
FORMOSA
BANGKOK
Gulf of Siam
Saigon
Hue
SOUTH CHINA SEA
PHILIPPINE ISLANDS (To U.S.)
LUZON
MANILA
BORNEO
BRUNEI
KUCHING
SUMATRA
JAVA
BATAVIA
Malacca Str.
Java Sea
Macassar Str.
CELEBES
MOLUCCA ISLANDS
SUNDA ISLANDS
EAST INDIA ISLANDS (DUTCH)
Timor Sea
Arafura Sea
NEW GUINEA
BISMARCK ARCHIPELAGO (GER.)
SOLOMON IS. (GER.) (BR.)
Torres Str.
Port Moresby
C. YORK
Gulf of Carpentaria
Port Darwin
Palmerston
CORAL SEA
GREAT BARRIER REEF
AUSTRALIA
NORTHERN TERRITORY
QUEENSLAND
WESTERN AUSTRALIA
SOUTH AUSTRALIA
L. Eyre
L. Gairdner
NEW SOUTH WALES
VICTORIA
Brisbane
C. Byron
Newcastle
SYDNEY
MELBOURNE
Wilson's Promontory
ADELAIDE
Ballarat
Bass Str.
PERTH
Fremantle
Steep Point
Great Australian Bight
Rockhampton
TASMANIA
Launceston
HOBART
TROPIC OF CAPRICORN
INDIAN OCEAN
PACIFIC OCEAN
EQUATOR
CAROLINE ISLANDS (GER.)
PELEW IS. (GER.)
YAP
MARIANNE IS. (GER.)
GUAM (To U.S.)
BONIN IS. (JAP.)
MARCUS I. (To U.S.)
WAKE I. (To U.S.)
MARSHALL IS. (GER.)
GILBERT IS. (BR.)
ELLICE IS. (BR.)
SANTA CRUZ IS. (BR.)
NEW HEBRIDES IS.
NEW CALEDONIA (FR.)
LOYALTY IS. (FR.)
NORFOLK I. (BR.)
FIJI IS. (BR.)
TONGA OR FRIENDLY IS. (BR.)
SAMOA IS. (GER.) (To U.S.)
TOKELAU IS. (BR.)
PHOENIX IS. (BR.)
COOK IS. (BR.)
SOCIETY IS. (FR.)
TUBUAI IS. (FR.)
KERMADEC IS. (BR.)
CHATHAM IS.
NEW ZEALAND
NORTH ISLAND
SOUTH ISLAND
Auckland
WELLINGTON
Cook Str.
Dunedin
MIDWAY I.
HAWAIIAN ISLANDS (To U.S.)
FANNING I.
CHRISTMAS I.
13000 ft.
6500 ft.
Revised, 1907
Copyright, 1903, by Rand, McNally & Company

FIG. 374.

Occupations. From its mountainous character in the eastern and western portions, and from its climate, we should naturally expect that the chief occupations in the colony would be grazing, agriculture, and mining. The mining is largely for gold, which is the most important export from the country. Indeed, in the case of Australia as of California, it was the discovery of gold that first brought colonists to the region.

The principal industry, however, is grazing. (See Fig. 375.) Australia has many cattle ranches or *runs*, as they are called, but sheep-raising is the most important, and the continent as a whole is the greatest sheep country of the world. Not only are there more sheep, but the quality of the wool, especially that from Victoria, is the finest known.

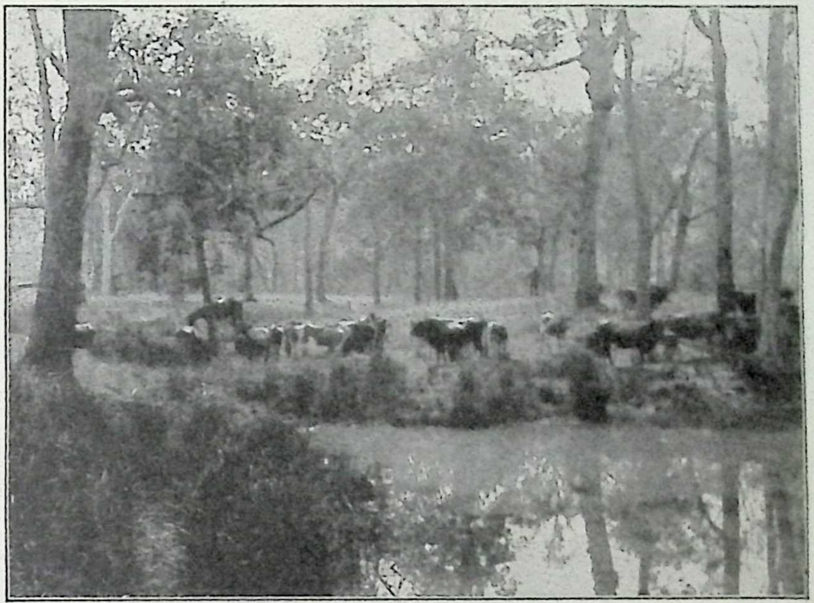

FIG. 375. *A group of cattle on a ranch. The raising of cattle and sheep is one of the principal industries of Australia.*

The only goods that are manufactured are certain necessary articles for use in the colony. Frozen meat is prepared, in certain of the states, especially in Queensland, for foreign use, and is exported largely to the United Kingdom.

Cities. The principal cities are the capitals of the different states, and all are on the coast. Thus they are commercial cities of importance.

The largest city is *Melbourne*. (See Fig. 374.) This city has about nine-tenths of the commerce of the continent.

To the south and southeast of Australia are the large islands of *Tasmania* and *New Zealand*, both of which are grazing countries. *Hobart* is the leading city of Tasmania, and *Auckland* is the principal city and port of New Zealand. This town is famous for exporting the best frozen meat that reaches England.

LXIV. THE ISLANDS OF THE PACIFIC

Ownership and Characteristics. The western portion of the great Pacific Ocean is thickly dotted with small islands, many of which belong to different countries of Europe. We have already studied certain of these islands because they belong to the United States.

Most of these islands are the tops of volcanoes that have grown up from the bottom of the ocean. The products are chiefly agricultural and similar to those usually found in the Hot Belt. The islands that belong to European countries are important for their harbor facilities and as coaling stations for vessels crossing the ocean. (See Fig. 114.)

Suggestions for Review

(1) In what way do the names of the states of Australia suggest the country to which they belong? (2) What other southern continents have occupations similar to those of Australia? (3) How would you reach Australia from the United States? (4) Find out by what routes the mails are carried from Australia to England. (5) Find out all you can about the Bushmen, as the savages of Australia are called.

cellar A

AIDS FOR TEACHERS

The suggestions on Part I. have been arranged primarily to show how nature study and handwork may be related to geography in such a manner as to be a help in the geography work.

SUGGESTIONS TO ACCOMPANY PART I

I., II., and III. Pages 7, 9, and 10.

Homes: Indian — Framework for tents constructed; skin or other material used.
Eskimo — Homes made of clay.
Streets and Roads: Arrangement of roads, houses, etc., shown by the sand table.
Guideposts made.
Buildings constructed of thin wood.
Arrangement of streets in towns shown.

V. and VI. Pages 16 and 19.

Slopes: Children's conception of level country, rolling country, etc., on sand table.
Routes followed by roads shown in each case.

VII., VIII., and IX. Pages 22, 26, and 29.

Stream development and work of water shown:
Formation of stream.
Making of channel.
Carrying of detritus.
Deposition of detritus.
A river system — Hills, plains, and valleys.
Formation of lakes: (*a*) By means of a natural obstruction; (*b*) by means of a dam.
Rapids and waterfalls.
Filling and draining of lakes.

NOTE: Out-of-door work is important at this stage.

X. Page 32.

Gardening: Peas, etc., started in various soils.

XI. and XII. Pages 36 and 40.

Non-instrumental weather observations:
Winds — Direction.
Weathervane constructed.
Velocity — Classified as calm, light, strong, etc.
Temperature — Classified as warm, cool, cold.
Relation to wind noted.
State of sky and precipitation noted.
Observations recorded on "Sunshine Chart" — fair day, orange disc of paper; cloudy day, gray disc; stormy day, black.
Relation to wind direction noted.
Moisture — Evaporation illustrated in various ways: Water placed near heat; clothes wrung out of water.
Condensation — Illustrated by breathing on pane; chilling water. Dew point found.
Rainfall — Shape and size of drops noted.
Amount of precipitation measured.
Snow — Flakes studied. Crystallization of salt, sugar, etc., noted. Snowfall measured.

XIII. Page 42.

Pioneer life studied and compared with present.
Agriculture: Gardening — Vegetables grown under varying conditions. Gardens visited.
Grazing — A model dairy studied; care of cows and milk.
Lumbering: Lumber camp studied. Sawmill visited.
Mining, Quarrying: Mine and life of miner studied. Excursion to mine or quarry.

XIV. Page 47.

Transportation — Commerce: Freight depots, docks, warehouses, and steamers visited.

XV. Page 49.

Practical observations:
Shadow of vertical rod marked at regular intervals before and after noon, to show time of noon.
The true north found.
Desks, etc., drawn to scale.
Other areas drawn to scale by teacher. The correct dimensions found by the pupils.

SUGGESTIVE QUESTIONS TO ACCOMPANY PART II

XVI. Page 53.

(1) If you were to start from your home and travel about the world eastward, what bodies of land and water would you pass over? (2) If you were to travel westward, what bodies of land and water would you cross? (3) Starting from your home in a northerly direction and traveling around the earth, what directions would you take? (4) What bodies of land and water would you cross? (5) Starting in a southerly direction and traveling around the earth, what bodies of land and water would you cross? (6) What oceans might we cross in traveling from North America to Eurasia? (7) Which one would you cross if you were going to Europe? (8) Which ones in going to Asia? (9) Name the bodies of

water surrounding each continent. (10) In what direction is each continent from North America? (11) What continents are crossed by the equator? (12) Which of the continents is the warmest? (13) How do you know? (14) What line divides the earth into northern and southern hemispheres? (15) Could we divide the earth in any other way and still have northern and southern hemispheres? (16) What continents are in the western hemisphere? (17) If you were to cross the ocean to Europe, in which hemisphere would you be? (18) Name all the continents of that hemisphere. (19) Is there more land or more water on the surface of the earth? (20) Which hemisphere has the more land, the northern or the southern, the eastern or the western? (21) Look at the globe and see if you could divide the earth into land and water hemispheres. (22) How deep is most of the ocean? (23) Find out how deep the deepest spot is. (24) How high is the highest mountain in the world? (25) If the highest mountain could be placed in this deepest spot could you see any of it? (26) How can you tell from looking at your map that the bed of the ocean is irregular?

XVII. Page 55.

(1) Represent the forms of land and water on the sand table. (2) Make a series of drawings illustrating these forms.

XVIII. Page 59.

(1) Tell how the people in Mexico and Central America live. (2) Find out how coffee is raised. (3) Trace the routes on the map by which this product might reach us. (4) In what part of North America do the people of the cold countries live? (5) Find their homes on the map. (6) Tell all that you can about the life of these people. (7) Would you rather live in the Eskimos' country or in a warm country? Why? (8) Find out what animals live in northern North America, and of what value they are. (9) By what routes may products from this section be sent to us? (10) What kind of a climate has northern South America? How do the people live? (11) Describe the climate of southern South America. (12) What products do we get from South America? (13) Trace the routes by which they come. (14) Which is the largest continent? (15) How does the winter temperature compare with that of North America? (16) What product is sent us from northern Eurasia? (17) Describe the climate of southern Europe. (18) What products are grown here? (19) By what routes would you send wine from southern France to New York? (20) Cutlery from Sheffield, England, to New York? (21) From what part of Eurasia do we get tea and rice? (22) Trace the routes by which these products are sent to us. (23) Which is the smallest continent? (24) Name some of its products. (25) Where have we found the same products? (26) Tell all that you can about the climate of the two places. (27) Why is Africa sometimes called the "Dark Continent"? (28) Find out what you can about the people of Central Africa. (29) Name some of the animals that are found here. (30) What are some of the products of Africa? (31) Are they like the products of any other country which you have studied? (32) Compare the climates of the regions having similar products.

XIX. Page 66.

(1) Name the Heat Belts. (2) What part of North America is in the Cold Belt? (3) What part of Eurasia? (4) Name some people who live in this region. (5) Where is the Hot Belt? (6) What part of Africa is in this belt? (7) What part of South America? (8) Name the other continents that are partly in this belt. (9) Where is the South Temperate Belt? (10) Which continents are partly in this belt? (11) Where is the North Temperate Belt? (12) In which belt do you live? (13) Notice the position of the sun in the morning. Which window receives the sunlight? (14) Notice the position of the sun at noon. (15) When does the sun pass from the eastern to the western part of the sky? (16) Notice the position of the sun in the late afternoon. (17) Why does it grow dark at night and light in the morning? (18) How long does it take the earth to turn once on its axis? (19) Compare the amount of light received at noon with that received in the early morning; with that received in the evening. (20) Do we get more light when the sun is high in the sky or when it is low? (21) At which time do we get more heat? (22) Drive a rod in the ground so that it will stand vertically. Measure the length of the shadow cast by this rod at different times throughout the day. (23) Is the sun high or low in the sky when the shadow is short? (24) When it is long? (25) Try to judge of the time of day from the length of the shadow. (26) Does the sun always set exactly in the west? Watch it during the summer and the winter in order to find out about it. (27) Watch and find out whether it always rises in the east. (28) At what season is the sun most nearly overhead at noon? (29) When are the rays most slanting at noon? (30) Why are they so slanting at this time? (31) Draw a diagram of the earth and the sun in our winter; in our summer. (32) Why is it warmer in the summer than in the winter?

XX. Page 75.

(1) What waters surround North America? (2) In what direction is North America from South America? From Europe? (3) If you could travel all around North America by water what bodies of water would you pass through? (4) In what heat belts does it lie? (5) Name some of the plants and animals found in each heat belt. (6) Mention the great highlands. (7) Where are they located? (8) Locate the great lowlands. (9) Find on the map the parts of North America that you think would have heavy rainfall; the parts that would have light rainfall. (10) Give your reasons. (11) Find out what plant life is found where the rainfall is heaviest; where it is lightest. (12) Name the greatest rivers of North America. (13) In what part of the country are the streams fewest in number? (14) Where are the shortest streams generally found? (15) The longest?

bathing suits

XXI. Page 78.

(1) In what part of North America is the United States? (2) Compare the people with those of northern North America; with those of southern North America. (3) In which part of North America would you rather live? (4) Why?

XXII. Page 82.

(1) Name the New England States. (2) In what part of the United States are they? (3) Name and locate the principal mountains. (4) Locate the lowlands. (5) Name and tell all that you can about the five largest rivers. (6) Describe the shore line. (7) What are the principal industries of New England? (8) In what section are lumbering and quarrying carried on? (9) In what kind of country? (10) Where is agriculture most successfully carried on? (11) Why? (12) Mention the most important farm products. (13) Mention the most important manufacturing cities, and name the chief products manufactured in each case. (14) Find out where all of these cities are located. (15) Why is New England a good place for fishermen? (16) Name the most important fishing town. (17) Name some products that New England sends to other parts of the country. (18) Name some products that must be brought to New England. (19) Name and locate the two greatest ports. (20) Why do so many people go to New England in the summer? (21) Collect pictures that tell just how the country looks and what people do there in the summer. (22) On an outline map of the New England section name the various states, locate the principal mountains and the principal rivers; show by coloring or shading the parts that are best for farming, for lumbering, for fishing, for quarrying; locate the most important towns.[1]

XXIII. Page 89.

(1) Name the middle and southern Atlantic coast states. (2) In what direction is New York from the New England States? (3) What kind of a shore line has this section? (4) Have the New England States or have the middle and southern Atlantic coast states the most harbors? (5) Why? (6) Tell all that you can about the climate of the middle coast states; of the southern coast states. (7) Are they warmer or colder than the New England States? (8) Tell what you can about the surface of the Atlantic coastal plain; about the soil. (9) What work would you expect many of the people to do? (10) What mountains are situated west of the coastal plain? (11) In what direction do they run? (12) Where is the Allegheny Plateau? (13) How can you tell the plateau from the mountains? (14) What occupation would you expect many of the people to follow? (15) Tell all that you can about the Hudson River, the Susquehanna River, and the James River. (16) Where is the Erie Canal? (17) Why is the valley of the Hudson of especial importance? (18) In which of these states, the middle Atlantic or the southern, is agriculture of the greater importance? (19) Name the principal products of each section. (20) Where is dairying very important? (21) Why is this region not so good for agriculture? (22) Describe a coal mine. (23) Find out all you can about the life of the miners. (24) Where is the great mining region of this section? (25) What minerals are found here? (26) Tell where the great forest areas are. (27) Name the chief products of these forests. (28) Why does the government want the forests to be preserved? (29) Locate the principal fishing area. (30) Why is this region especially good for raising oysters? (31) Name and locate the chief oyster market.

XXIV. Page 96.

(1) Why are the northern states such important manufacturing states? (2) Name the chief manufacturing cities of this section and the leading products or product which each city manufactures. (3) How does New York rank among the manufacturing cities of the country? (4) Name and locate the principal Atlantic seaports. (5) Which has the best harbor? (6) Which has the most trade? (7) Why is New York such a great city? (8) How are the products of the interior of the country brought to New York? (9) Locate Buffalo. (10) Why is its location a good one? (11) Where are Syracuse, Rochester, Erie, Scranton, Wilkesbarre, Richmond, and Norfolk? (12) For what is each city noted? (13) Tell all that you can about Washington. (14) On an outline map of the United States name all the states of this section; locate the highlands, the lowlands, and the chief rivers; show also by coloring or shading where the principal products are found; locate the principal towns.

XXV. Page 102.

(1) In what part of the United States are the southern Mississippi Basin states? (2) Describe the surface of these states. (3) What are levees? (4) Why have they been built? (5) Name and locate the mountains. (6) Name and describe the most important rivers. (7) Why is New Orleans such an important commercial city? (8) Describe the climate of this section. (9) Where is the rainfall heaviest? (10) Where is it least? (11) What is the principal occupation of the people in the rainy region? (12) What do they do principally in the dry region? (13) Name the chief agricultural products raised here. (14) For what products are Texas, Mississippi, and Louisiana noted? (15) Where is the grazing section? (16) Why is this section not used for agriculture? (17) Locate the mining areas. (18) Name the most important minerals which are mined here. (19) Name the principal manufacturing cities and the most important products which they manufacture. (20) What does Louisiana manufacture in great quantities? (21) Locate Galveston and Mobile. (22) Why are they important cities? (23) Tell all that you can about the trade of New Orleans. (24) Write the names of these states on an outline map of the United States; on the same map locate and name the mountains and the principal rivers; show by shading where the principal products are found; where grazing is carried on. (25) Locate the principal manufacturing cities; the principal ports.

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[1] Use the same outline map for the succeeding sections

XXVI. Page 107.

(1) In what part of the United States are the northern Mississippi Basin states? (2) Describe the surface of these states. (3) Compare their surface with that of the New England States. (4) Are the farms larger or smaller than the farms of New England? (5) Why is it easier to farm in this section than in New England? (6) Find out the names of some of the machines that the farmers use on these large farms and what work they do. (7) Name and describe the principal river which flows through this section. (8) Name its principal tributaries in the section. (9) Name the Great Lakes. (10) Tell all that you can about the temperature of these states. (11) Where is there very little rainfall? (12) Why is this so? (13) What is the principal occupation in the eastern part? (14) In the western? (15) In what state did we find this same difference in rainfall and occupation? (16) Why is this called the "great food-producing section"? (17) Where is the great wheat region of the United States? (18) Name the states which produce the most wheat; the most corn; the most oats; the states which produce the most live stock. (19) In which of these states is mining important? (20) What minerals are found in the different states? (21) Locate the great forests. (22) For what other industry are these states as a *whole* noted? (23) Name the chief manufactured products. (24) For which of these products is Illinois noted? Wisconsin? Minnesota? (25) Name the important manufacturing cities which are on the Great Lakes and the Mississippi River. (26) What is the most important product of Minneapolis? St. Louis? Kansas City, Kansas? (27) Name all the important lake ports of this section and locate each one. (28) Give all the reasons that you can why Chicago has become such a great city. (29) Why are there so many commercial cities in these states? (30) On an outline map of the United States name all the states of this group and locate the principal rivers; show by shading or coloring where the principal products are found; show where grazing is important; locate the principal towns.

XXVII. Page 112.

(1) Why are the Plateau States so called? (2) Tell all you can about their surface. (3) In what part of the United States are they? (4) Describe their drainage. (5) How are salt lakes formed? (6) Locate Great Salt Lake. (7) Describe the climate of this section. (8) Why do trees and grass grow only on the highest mountains here? (9) Would you expect to find many people in these states? Why? (10) How are crops raised in this dry section? (11) Find out something about the desert region of the southwestern United States. (12) Describe the great ranches of this section. (13) How are the great herds of cattle cared for? (14) Which state raises the greatest number of sheep in the United States? (15) What other industry is very important in these states? (16) Name and locate the principal cities interested in mining. (17) Describe the Grand Canyon of the Colorado as fully as you can. (18) Where is Yellowstone National Park? (19) For what is it especially famous? (20) On a blank map of the United States write the names of the states in this group; represent the mountains, the plateaus, and the drainage; show where the principal occupations are found; locate the most important cities.

XXVIII. Page 120.

(1) Which is the most direct route from your home to San Francisco? (2) Describe the surface of the Pacific states. (3) Locate some of the highest mountains. (4) Where are the lowlands? (5) Where do most of the people live? (6) Compare the number of harbors with the number along the Atlantic coast. (7) Why is it more difficult to carry on trade along the Pacific coast than along the Atlantic? (8) Describe the climate of the northern Pacific states. (9) Why do so many people go to southern California to spend the winter? (10) Describe the climate of the southern Pacific states. (11) What products are raised in the northern part of this section? (12) Where are the forests found? (13) What products are raised in the southern part? (14) Where is grazing an important occupation? (15) Lumbering? (16) Find out all that you can about salmon-fishing. (17) What minerals are found in these states? (18) Find out how people crossed the continent when gold was first discovered in California. (19) Locate the principal manufacturing cities and name the leading products of each. (20) Name and locate the leading seaports of the Pacific coast. (21) Tell all that you can about San Francisco. (22) Describe the Yosemite Valley. (23) On an outline map of the United States name the states of this group; locate the mountains and the principal rivers; show where the principal products are found; locate the most important manufacturing and commercial cities.

GENERAL REVIEW

(*Map Work*)

(1) On a blank map of the United States indicate the various states and territories, the surrounding waters, the great mountains, the most important rivers, and the twenty largest cities. (2) Find out to what sections of the United States New England sends her manufactured goods. (3) Represent three or four different routes taken by these products. (4) Show by what route you would send oranges from California to Massachusetts. (5) From Florida to New York. (6) Cotton from Louisiana to Massachusetts. (7) Wheat from South Dakota to Minnesota. (8) Flour from Minnesota to Philadelphia. (9) Dressed beef from Illinois to New York. (10) Name six products which you receive in your town from different parts of the United States, and show by what routes they come to you.

XXIX. Page 125.

(1) What do we mean when we speak of the "de[illegible]ection encies" of a country? (2) Name the most im[illegible]ne. (3) dependencies of the United States. (3) Locate [illegible]ermany.

(4) Name all the bodies of water bordering it. (5) In what heat belt is it? (6) Get some pictures of glaciers and tell all that you can about them. (7) Why is Alaska of value to the United States? (8) Who are the natives of Alaska? (9) Tell all that you can about the way they live. (10) Find out how the Eskimos catch the seals. (11) Locate the leading cities of Alaska. (12) Describe Hawaii. (13) Where is it? (14) Tell what you can of its climate. (15) What valuable product do we get from these islands? (16) Describe the people who are found here. (17) Compare life in Hawaii with life in Alaska. (18) Name and locate the most important port. (19) Where are the Philippine Islands? (20) Tell all that you can about the natives of these islands. (21) What are some of the important products? (22) What products do the Philippines send to the United States? (23) Name and locate the principal seaport. (24) Tell all that you can about Porto Rico.

XXX. Page 131.

(1) Name the countries of northern North America. (2) To what country does each belong? (3) Compare the climate of the southern part of this country with that of the northern part of the United States. (4) Find out all that you can about the climate of the northern part of Canada. (5) Find out how far north grain will grow. (6) What is the principal food of the people who live north of this line? (7) Tell all that you can about them. (8) Compare the products and occupations of southern Canada with those of northern United States. (9) Where is wheat raised in great quantities? (10) Where is the great grazing region? (11) How would you go by water from Duluth to Halifax? (12) Compare the Mackenzie River in size with the St. Lawrence. (13) Is it as important as the St. Lawrence? (14) Can you tell why? (15) Locate the most important cities on the St. Lawrence River and the Great Lakes. (16) Which has the better location for trade with Europe, New York or Montreal? (17) Why? (18) Where is the principal manufacturing district? (19) Name the chief products manufactured. (20) Why are Montreal, Quebec, Vancouver, Ottawa, and Halifax important?

XXXI. Page 134.

(1) Name the countries of southern North America. (2) Describe the surface of Mexico. (3) How high is the plateau? (4) In what heat belt does Mexico lie? (5) Describe the climate of the lowlands; of the plateau. (6) Compare the vegetable products of the lowlands and the highlands. (7) Where is agriculture carried on? (8) Mining? (9) What are the leading exports? (10) Find out to what countries the exports are sent. (11) Locate the most important seaports. (12) Name the states hich make up Central America. (13) Describe the cliVte. (14) Compare the climate with that of Mexico. (18)What is the chief industry? (16) Name the most souttant exports. (17) Find out to what countries the Nams are sent. (18) Name and locate the most important cities. (19) Where are the West Indies? (20) Find out all about the eruption of Mont Pelée in 1902. (21) In what heat belt are the West Indies? (22) What is the leading industry? (23) Name the chief products and the leading exports. (24) Name some of the products that the West Indies send to the United States. (25) Locate the most important cities. (26) On an outline map of North America indicate the countries, the surrounding waters, the mountain ranges, the important rivers, the Great Lakes, and the leading cities. (27) Where are the principal exports of northern North America sent? The principal exports of southern North America? (28) Show on your map the routes which lie within North America. (29) Indicate on your map the countries owned by the British Government; by the United States; by Denmark.

XXXII. Page 141.

(1) In what direction is South America from North America? (2) If a line were drawn from New York City southward, through what countries of South America would it pass? (3) What waters surround South America? (4) Describe the shore line. (5) Do you think there are many good harbors there? Why? (6) Compare the shore line of South America with that of North America. (7) Through what part of South America does the equator pass? (8) What great mountain ranges are in the western part of South America? (9) Compare North America and South America in size. (10) What part of South America is always warm? (11) What mountains are in the eastern part? (12) Compare the climate of southern South America in July with that of southern North America. (13) Tell about the rainfall of the Pacific coast. (14) Describe the three most important rivers of South America. (15) Compare the Amazon with the Mississippi in size. (16) Tell about the animals of South America. (17) What are the leading occupations? (18) Where are the great mining regions? (19) Where is agriculture carried on? (20) Find out where the great grazing sections are located. (21) In what part of South America is Brazil? (22) How does it compare in size with the United States? (23) Tell all you can about the surface. (24) Where do most of the people live? (25) Name the chief products and the leading exports. (26) Find out to what countries the exports are sent. (27) Where are the most important cities? (28) Why are Rio de Janeiro, Para, Santos, and Pernambuco important cities? (29) Why is the location of Manáos a good one? (30) In what part of South America is the Argentine Republic? (31) In what direction is it from Brazil? (32) Describe its surface. (33) Describe the Rio de la Plata. (34) Name the chief products of the country. (35) Which of these products are sent to the United States? (36) Tell all that you can about Buenos Aires. (37) Where are Paraguay and Uruguay? (38) Describe their surface, their products and exports. (39) Where are Montevideo and Asuncion? (40) Where is Chile situated? (41) Describe its surface. (42) Tell all that you can about the climate of Chile. (43) What are

the chief industries? (44) Where are Valparaiso and Santiago? (45) Describe the harbor of Valparaiso. (46) Where are Bolivia, Peru, and Ecuador? (47) Which of these countries is crossed by the equator? (48) Describe their surface. (49) Locate Cotopaxi and Chimborazo. (50) Describe the climate of these countries. (51) Tell all that you can about Lake Titicaca. (52) Find out whether this is a fresh-water lake. (53) Name and locate the most important cities. (54) Where are Colombia, Venezuela, and Guiana? (55) In what heat belt do they lie? (56) Describe their surface. (57) Describe the Orinoco River. (58) In which of these countries would you expect to find agriculture an important occupation? (59) Name the most important products. (60) Locate the most important cities. (61) On an outline map of South America name the countries and the surrounding waters; locate the principal mountains and the largest rivers; locate the chief cities; indicate the countries owned by Great Britain, Holland, and France.

XXXIII. Page 151.

(1) In what direction is Europe from North America? (2) In what heat belt does it lie? (3) Describe the shore line. (4) Does it look as though there were many good harbors? (5) How does the shore line compare with that of North America? (6) With that of South America? (7) Does the western part or the eastern part receive the more rainfall? (8) Explain why this is so. (9) Name the most important mountains in Europe. (10) What mountains have you heard the most about? (11) What is the reason for this? (12) Where is the great plain of Europe? (13) Name the most important rivers of western Europe; of eastern Europe. (14) Why are the rivers of eastern Europe so much longer than those of the western part? (15) What people do we find in northern Europe? (16) Name all the languages you can that are spoken in Europe. (17) Why is agriculture an important occupation in this country? (18) Where is grazing carried on? (19) Name the other important occupations.

XXXIV. Page 154.

(1) What do we mean when we speak of the "United Kingdom"? (2) What does "Great Britain" include? (3) Name the most important colonies of the British government and tell where they are. (4) Compare the climate of the United Kingdom with that of eastern United States. (5) Which lies the farther north, the United States or Europe? (6) Describe the surface of the British Isles. (7) Name some of the good harbors. (8) Find some good farming regions on your map; some regions that are better for grazing; for mining. (9) Why should you expect Great Britain to be a very important manufacturing country? (10) Locate all of the manufacturing cities mentioned and name the products for which each is noted. (11) Why are the imports and the exports of the United Kingdom so great? (12) Locate all the ports mentioned and name the leading exports of each. (13) On an outline map of the British Isles name the countries and surrounding waters; locate the principal mountains and rivers; show where the chief products are found and where the grazing regions are located; locate the most important towns.

XXXV. Page 162.

(1) In what part of Europe is France? (2) Describe its climate; its surface. (3) How does the land slope? How do you know? (4) Where is Mont Blanc? (5) Tell all that you can about it. (6) Describe the Loire, the Seine, and the Rhone. (7) Name the principal products. (8) Locate the principal manufacturing cities and the chief ports. (9) For what is each city noted? (10) Tell all that you can about the city of Paris.

XXXVI. Page 165.

(1) Describe the surface of Spain and Portugal. (2) Why is the interior dry? (3) What occupations would you expect to find on the plateau? (4) On the well-watered lowland? (5) What is the most important crop? (6) Name some of the mineral products. (7) Locate the most important cities. (8) Of what importance is Gibraltar?

XXXVII. Page 167.

(1) Where is Switzerland? (2) Why is it visited by so many tourists each year? (3) Describe its scenery. (4) Find out all that you can about the high peak called the Matterhorn. (5) What are the principal occupations of Switzerland? (6) How are the cattle cared for during the winter; during the summer? (7) Name some of the manufactured products. (8) Locate the most important cities.

XXXVIII. Page 169.

(1) Describe the coast of Italy. (2) Where would you expect good harbors? (3) Where are the lowlands? (4) Locate the Apennines. (5) Find out all that you can about Mount Vesuvius. (6) Where is Mount Etna? (7) What do the crops of Italy tell you of its climate? (8) Locate the most important cities. (9) Why is Venice of special interest?

XXXIX. Page 170.

(1) What great river flows through Austria-Hungary? (2) What mountains are on the west? (3) On the east? (4) What is the "Iron Gate"? (5) Describe the climate of Austria-Hungary. (6) In what part of the country would you expect farming to be carried on? (7) Name the most important farm products. (8) What other occupations are of importance? (9) Locate Vienna, Budapest, and Prague, and tell why they are important. (10) Through what waters would a vessel pass in going from Trieste to New York? (11) Describe the scenery of Tirol.

XL. Page 172.

(1) Look at the map of Germany. In what direction does the country slope? (2) Describe its coast line. (3) Compare the climate of northern and southern Germany.

(4) Name the principal agricultural products. (5) Name the important industries. (6) Name and locate the most important manufacturing and commercial cities. (7) Through what waters would you sail in going from Hamburg to the United States? (8) Describe the valley of the Rhine.

XLI. Page 174.

(1) Why are Belgium and the Netherlands called the "Low Countries"? (2) Find out all that you can about dikes. (3) What are the principal occupations of these countries? (4) Why is dairying important? (5) Describe the shore line. (6) Where are there good harbors? (7) Tell for what Ghent, Mechlin, Antwerp, Copenhagen, Amsterdam, and Rotterdam are noted, and where they are. (8) Through what waters would a cargo of ivory pass in going from Congo Independent State to Antwerp?

XLII. Page 176.

(1) What does the Scandinavian Peninsula include? (2) Describe its shore line. (3) How were the fiords formed? (4) What is the principal occupation of the people of Norway? (5) Where are the Lofoten Islands? (6) Why are they important? (7) Describe the surface of Sweden. (8) What is the chief occupation in Sweden? (9) Where is mining important? (10) What is the principal export of Sweden? (11) Where are Stockholm, Gothenburg, Christiania, and Bergen? (12) Why are they important? (13) Locate Hammerfest. (14) Why are the summer days so much longer in northern Norway than in your home?

XLIII. Page 178.

(1) How does Russia compare in size with the rest of Europe? (2) Describe the surface of Russia. (3) Where are the Ural Mountains? (4) The Caucasus? (5) Notice the direction of the rivers. (6) How does the land slope? (7) Trace the principal divide. (8) Describe all the rivers mentioned in the text. (9) Which is the largest river of Europe? (10) Describe the climate of Russia. (11) Find out what the tundra is; the steppe. (12) What are the principal agricultural products? (13) What other products are important in Russia? (14) Locate all the manufacturing and commercial cities mentioned and tell why each one is important. (15) Find out anything that you can about the fair at Nizhniy Novgorod. (16) Are St. Petersburg and Archangel well situated to carry on commerce? Give reasons for your answer.

XLIV. Page 180.

(1) Name the countries of the Balkan Peninsula. (2) Describe their surface. (3) Describe the shore line of Turkey and Greece. (4) Name the most important product. (5) Tell all that you can about the Turks. (6) Why is the location of Constantinople a good one? (7) Tell something about the early history of Athens.

XLV. Page 182.

(1) Where is Iceland? (2) Tell all you can about it.

GENERAL REVIEW

(Map Work)

(1) On an outline map of Europe indicate the countries and the surrounding waters; locate the mountains and the important rivers; locate the principal cities.

XLVI. Page 183.

(1) In what direction is Africa from North America? (2) How does it compare with the other continents in size? (3) In what heat belt does most of Africa lie? (4) Describe its shore line. (5) Compare it with that of North America; with that of Europe. (6) Describe its surface. (7) Name the largest rivers. (8) Why has it been difficult to reach the interior? (9) Describe the vegetation of central Africa. (10) What are savannas? (11) Find out all you can about the desert, Sahara. (12) What animals are found in Africa? (13) Describe the people.

XLVII. Page 186.

(1) What countries are in northern Africa? (2) What mountains are in the north? (3) Name some of the products of Morocco, Tunis, and Algiers. (5) Why is Tripoli important? (6) Find out what you can about the caravan trade. (7) What is the most important country of northern Africa? (8) Describe its climate. (9) Tell all that you can about the Nile. (10) Why is Egypt sometimes called the "gift of the Nile"? (11) What are the principal crops of Egypt? (12) Describe the Nile delta. (13) Find the shortest route by which a vessel might go from Constantinople to China. (14) Trace the route which a vessel would have been obliged to take before the canal was made. (15) Where are Port Said and Suez?

XLVIII. Page 192.

(1) Where is the Sudan? (2) What people live in the Sudan? (3) How do they get their living? (4) Name the principal products.

XLIX. Page 193.

(1) Describe the surface of South Africa. (2) Describe the climate. (3) What other countries have you studied that are like South Africa in surface and climate? (4) Name the principal industries. (5) Locate Kimberley and Johannesburg Port Elizabeth and Cape Town, and tell for what each one is noted. (6) Compare Madagascar in size with the British Isles. (7) Describe its climate and products.

GENERAL REVIEW

(Map Work)

(1) Indicate the countries of Africa and the surrounding waters on an outline map; show also the mountains,

the chief rivers, and the most important cities; indicate the countries that are owned by the British government; by France; by Germany.

LI. Page 195.

(1) How does Asia rank in size among the other continents? (2) Compare it in size with North America; with Europe. (3) Describe the coast line. (4) Compare it with the coast of Africa; with that of North America. (5) In what heat belts does Asia lie? (6) Compare its heat belts with those of North America. (7) Where is the rainfall very heavy? (8) Where very light? (9) Why is there this difference? (10) What part of Asia has a climate very much like that of the United States? (11) Where is the coldest place known in the world? (12) What is the principal mountain range of Asia? (13) Where is the "roof of the world"? (14) Locate the two great plateaus. (15) How does the plain in the northern part of Siberia slope? (16) Compare it with the plain of northern Russia. (17) Name and describe the principal rivers of Asia. (18) Compare the Aral basin with that of Great Salt Lake. (19) Describe the plant life of Asia. (20) Compare it with that of North America. (21) Name the most important animals of Asia. (22) The most important minerals. (23) What are the leading occupations? (24) What peoples live in Asia? (25) Describe the yellow people.

LII. Page 201.

(1) Describe the surface of Siberia. (2) What kind of winters has it? (3) What kind of summers? (4) Find out all that you can about the people.

LIII. Page 203.

(1) What provinces are included in Asiatic Turkey? (2) Describe its surface; its climate. (3) What occupation would you expect to find here? (4) Where is the Dead Sea? (5) Why is it so salt? (6) Locate Jerusalem, Jaffa, and Damascus. (7) What is the principal occupation in Arabia? (8) How do the people live? (9) What are wandering tribes called? (10) Locate Mecca, and tell why it is important.

LIV. Page 204.

(1) Describe the surface of Persia; its climate. (2) Compare it with Arabia. (3) Compare the chief occupations in the two countries.

LV. Page 204.

(1) Describe the location of India. (2) In what heat belt does it lie? (3) When does India have its rainy season? (4) Why? (5) Name and describe the three great rivers in India. (6) Why do so many people live in the valleys of these rivers? (7) What is the leading occupation in India? (8) Name the principal products. (9) With what country does India carry on a great deal of her trade? (10) Locate Calcutta and Bombay. (11) Tell all that you can about the people.

LVII. and LVIII. Pages 207 and 208.

(1) What countries are included in the Chinese Empire? (2) Compare it in size with the United States. (3) Describe its surface. (4) Where is Mount Everest? (5) How high is it? (6) Compare it in height with the highest mountain of the western hemisphere. (7) Where are the great plains of China? (8) How were they formed? (9) Why are they so thickly settled? (10) Describe the principal rivers. (11) Describe the winters and the summers of the Chinese Empire. (12) Name the chief products. (13) Name some products that China sends to the United States. (14) Locate the chief ports. (15) Why have the Chinese made so much less progress than the other great nations?

LIX. Page 210.

(1) Name the most important islands of the Japanese Empire. (2) Describe its surface. (3) Find out what kind of homes they build in Japan. (4) What is the reason for this? (5) Describe the climate. (6) To what race do the Japanese belong? (7) Compare the progress they have made with that of the Chinese. (8) Name the principal exports. (9) Locate the leading cities and tell why each one is important.

LXI. and LXII. Pages 212 and 213.

(1) Why is the location of Singapore a good one? (2) Where is the Malay Archipelago? (3) Name the most important islands. (4) What are the principal products?

LXIII Page 214.

(1) Compare Australia in size with the other continents; with the United States. (2) Name the states into which it is divided. (3) To what nation does it belong? (4) In which heat belt does most of it lie? (5) Name all the continents that lie partly in the hot belt. (6) Compare the rainfall of the eastern coast of Australia and the interior. (7) Why is there such a difference? (8) Name all the countries you can that are like Australia in this respect. (9) Describe the animals of Australia. (10) Name the chief occupations. (11) Where would you expect to find the sheep runs? (12) Locate Melbourne and Sydney (13) Why are they important?

LXIV Page 217

(1) Find the most important islands of the Pacific. (2) Which ones belong to the United States? (3) To Great Britain? (4) To Germany? (5) To France? (6) Which are independent? (7) Find out of what value these islands are to the countries that own them.

GENERAL REVIEW

(*Map Work*)

(1) Indicate the countries of Asia and the surrounding waters on an outline map; locate the mountains, the rivers, and the principal cities; indicate the colonies of the United Kingdom.

Playthings.

SUGGESTIONS FOR COLLATERAL READING

The references given below have been carefully selected from all available supplementary volumes and are here presented because of their worth as collateral reading on the topics indicated. The references are given by chapters for convenience in use.

KEY TO ABBREVIATIONS

American Book Company (A. B. C.); D. Appleton & Company (Ap.); Cassell Publishing Company (C.); The Century Company (Cen.); DeWolfe, Fisk & Company (D. F. & Co.); E. P. Dutton & Company (D.); Educational Publishing Company (E. P. C.); A. Flanagan & Company (F.); Ginn & Company (G.); D. C. Heath & Company (H.); Lee & Shepard (L. & S.); The Morse Publishing Company (M.); Rand, McNally & Company (R. McN.); Charles Scribner's Sons (S.); Silver, Burdett & Company (S. B. C.).

I. Page 7.

Payne's *Geographical Nature Studies* (A. B. C.), Shelter, p. 98; Our Shelter, p. 100.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), Homes of the Animals, p. 154; Our Homes, p. 160.

II. Page 9.

Payne's *Geographical Nature Studies* (A. B. C.), People Live Together, p. 137.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), Something About a City, p. 209; The Country Store, p. 206.

IV. Page 14.

Payne's *Geographical Nature Studies* (A. B. C.), Government: Home, p. 140; School and Country, p. 142.

V. and VI. Pages 16 and 19.

Payne's *Geographical Nature Studies* (A. B. C.), Surface, p. 32; Slopes, p. 33; Valleys, p. 36; Divides, Hills, Mountains, Plateaus, p. 48.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), The Surface of the Land, p. 91; Story of a Mountain, p. 104.

Long's *Home Geography* (A. B. C.), Plains, p. 31; Hills, Mountains, Valleys, p. 35.

VII., VIII., and IX. Pages 22, 26, and 29.

Frye's *Brooks and Brook Basins* (G.), At Work in the Dark Soil, p. 10; On the Water-Parting, p. 18; In the Brook-Bed, p. 27; Brook Basins and Systems, p. 36; Home to Old Ocean, p. 114.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), Water Works for Us, p. 66; How the River Made the Valley, p. 84; The Summer Stream, p. 89; Something About Lakes, p. 108.

Long's *Home Geography* (A. B. C.), How Rivers are Made, p. 50; More About Rivers, p. 54: Work of Flowing Rivers, p. 59; Waterdrop's Story, p. [illegible]

Parker and Helm's *Uncle Robert's Geography, Book III.* (Ap.), A Day on the River, p. 135; The Walk After the Rain, p. 158.

Payne's *Geographical Nature Studies* (A. B. C.), The Sorting of Silt, p. 58; Work of the Streams, p. 61; Stream Systems, p. 68; Water in the Ground, p. 71; Pools, Ponds, and Lakes, p. 76.

Andrews' *Stories Mother Nature Told Her Children* (G.), What the Frost Giants Did, p. 85.

X. Page 32.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), The Soil, p. 15; How the Soil is Made, p. 18; What Plants Need, p. 25.

Frye's *Brooks and Brook Basins* (G.), How Soil is Made and Carried, p. 44.

XI. and XII. Pages 36 and 40.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), Three Forms of Water, p. 39; Where the Water Comes From, p. 43; The Wind, p. 48; The Clouds, p. 52.

Long's *Home Geography* (A. B. C.), How Water is Changed to Vapor, p. 42; How Vapor is Changed to Water, p. 44; Dew, Clouds, Rain, p. 46.

Frye's *Brooks and Brook Basins* (G.), The Raindrops Set Out on Their Journey, p. 1; Forms of Water, p. 54; The Atmosphere in Motion, p. 61.

Payne's *Geographical Nature Studies* (A. B. C.), Water in the Air, p. 16; Getting Moisture From the Air, p. 19; Where the Rain Comes From, p. 22.

XIII. and XIV. Pages 42 and 47.

Payne's *Geographical Nature Studies* (A. B. C.), Farming, p. 102; Stock-Raising and Dairying, p. 105; Lumbering, p. 108; Mining, p. 111; Fishing, p. 113; Manufacturing, p. 114; Making Flour, p. 117; Making Cloth, p. 119; Making Iron and Steel, p. 122; The Occupations—Trade or Commerce, p. 124; Transportation by Land, p. 125; Transportation by Water, p. 127.

Andrews' *Stories Mother Nature Told Her Children* (G.), One of God's Storehouses, p. 125.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), Occupations, p. 177; Trade and Commerce, p. 181; Hunting and Fishing, p. 185; Farming, p. 189; Stock-Raising, p. 194; Lumbering, p. 199; The Making of Sugar, p. 213; The Story of the Silk Worm, p. 221; Where Minerals are Found, p. 116; How People Used to Travel, p. 167; Traveling To-day, p. 171.

XV. Page 49.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), What is a Map, p. 233.

Long's *Home Geography* (A. B. C.), How the Sun Shows Direction, p. 10; How the Stars Show Direction, p. 14; How the Compass Shows Direction, p. 15; Questions on Direction, p. 17; How to Tell Distance, p. 21; Pictures and Plans, p. 23; Exercise in Drawing Plans, p. 27.

XVI. and XVII. Pages 53 and 55.

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), The Ocean, p. 76; The Work of the Ocean, p. 80.

Long's *Home Geography* (A. B. C.), Forms of Land and Water, p. 73; More About Forms of Land and Water, p. 76; A Trip to the Highlands, p. 80.

XVIII. and XIX. Pages 59 and 66.

Andrews' *Seven Little Sisters* (G.), and *Each and All* (G.).

Carroll and Jerome's *Around the World*, Second Book (M.).

Fairbanks' *Home Geography for Primary Grades* (E. P. C.), What is Climate, p. 93; What We Learned by Climbing a Mountain, p. 97; The Seasons, p. 29; How the Seasons Affect Plants and Animals, p. 34.

Miller's *Little People of Asia* (D.).

Schwatka's *Children of the Cold* (C.).

Shaw's *Big People and Little People of Other Lands* (A. B. C.).

Smith's *Eskimo Stories* (R. McN.), The Northland, p. 11; How the Eskimos Live, p. 16; The Walrus, p. 20; Seals, pp. 35 and 49; A Long Journey, p. 31; Icebergs, p. 37; The White Bear, p. 39; The Story of a Real Eskimo, p. 177.

Starr's *Strange Peoples* (H.).

Youth's Companion Series, *The Wide World* (G.).

Perdue and LaVictoire's *Child Life in Many Lands* (R. McN.), Hunting and Fishing, p. 45; Tea, p. 83.

XX.-XXXI. Pages 75–140.

Carpenter's *North America* (A. B. C.).

King's *The Picturesque Geographical Readers*, Second Book (L. & S.).

Rocheleau's *Great American Industries* (F.), Vol. I., Minerals; Vol. II., Products of the Soil; Vol. III., Manufactures.

Chase and Clow's *Stories of Industry* (E. P. C.), Vol. I.; Vol. II.

XXI.-XXVIII. Pages 78–125.

Carroll and Carroll's *Around the World*, Third Book (M.).

Smith's *Our Own Country*, Book III. (S. B. C.).

King's *The Picturesque Geographical Readers* (L. & S.), Third Book, *The Land We Live In* (Part I.); Fourth Book, *The Land We Live In* (Part II.); Fifth Book, *The Land We Live In* (Part III.).

XXIX. Page 125.

Carroll and Jerome's *Around the World*, Second Book (M.), Hawaii, p 208; Philippines, p. 196.

Youth's Companion Series, *Toward the Rising Sun* (G.), Life in Manila, p. 104.

Starr's *Strange Peoples* (H.), The People of the Philippines, p. 156.

XXX. Page 131.

Youth's Companion Series, *Strange Lands Near Home* (G.), The Play of Eskimo Boys, p. 120; The Home of the Icebergs, p. 127.

Starr's *Strange Peoples* (H.), The Peoples of North America, Eskimo, p. 6.

Coe's *Our American Neighbors*, Book IV. (S. B. C.).

XXXI. Page 134.

Carroll and Jerome's *Around the World*, Second Book (M.), Mexico, p. 47; Cuba, p. 163; Porto Rico, p. 188.

Starr's *Strange Peoples* (H.), Mexicans, p. 170.

Youth's Companion Series, *Strange Lands Near Home* (G.), In the Grand Plaza of Mexico, p. 16; A Mexican City, p. 26; A Growing Mountain, p. 36; A Trip to Santo Domingo, p. 8. *The Wide World* (G.), The Boys of Mexico, p. 108.

Coe's *Our American Neighbors*, Book IV. (S. B. C.), pp. 151–215.

XXXII. Page 141.

Carpenter's *South America* (A. B. C.).

Coe's *Our American Neighbors* (S. B. C.), South America, pp. 219–324.

Chase and Clow's *Stories of Industry* (E. P. C.), Vol. I. and Vol. II.

Starr's *Strange Peoples* (H.), South American Peoples, p. 26.

Youth's Companion Series, *Strange Lands Near Home* (G.), A Venezuelan Railway, p. 44; Life in Asuncion, p. 60; An Odd City in the Andes, p. 75; The Land of the Llama, p. 86; The Argentine Capital, p. 97. *The Wide World* (G.), South American Games, p. 101.

XXXIII.-XLV. Pages 151–182.

Carpenter's *Europe* (A. B. C.).

Chase and Clow's *Stories of Industry* (E. P. C.).

Coe's *Modern Europe* (S. B. C.).

King's *The Picturesque Geographical Readers*, Sixth Book (L. & S.).

XXXV. Page 162.

Youth's Companion Series, *Northern Europe* (G.), A People on Stilts, p. 46; The Eiffel Tower, p. 53. *The Wide World* (G.), Boys and Girls of Paris, p. 65.

XXXVI. Page 165.

Starr's *Strange Peoples* (H.), Basques, p. 43.

Youth's Companion Series, *Under Sunny Skies* (G.), Granada, p. 4; Toledo and Cordova, p. 1.

XXXVII. Page 167.

Carroll and Jerome's *Around the World*, Second Book (M.), Switzerland, p. 129.

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Youth's Companion Series, *Northern Europe* (G.), Life in the Alps, p. 78; An Open-Air Parliament, p. 95. *The Wide World* (G.), An Alpine Village, p. 79.

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All figures refer to pages. Authority for pronunciation: Webster's International Dictionary (1904).

Key to pronunciation: ā, as in fāte; ȧ, in pref′ȧce; â, in âir; ă, in ădd; ä, in fär; ȧ, in grȧss; ạ, in ạll; *a*, in fi′n*a*l; ē, in ēve; ė, in ė-vent′; ĕ, in ĕnd; ẽ, in hẽr; *e*, in re′c*e*nt; ī, in īce; ĭ, in ĭ-de′a; ĭ, in pĭn; ō, in rōw; ȯ, in ȯ-bey′; ô, in lôrd; ŏ, in nŏt; ū, in ūse; ů, in ů-nite′; ŭ, in ŭp; û, in fûrl; ụ, in rụde; ụ, in fụll; ў, in pitў; ȳ, in flȳ; o͞o, in mo͞on; o͝o, in go͝od; ou, in out; oi, in oil; ŋ-ng, in iŋk.

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